

#### 9.5.4 Utilization of NGOs

On the national level, the DILG should screen and select national NGOs, with local networks or offices, that specialize in community management programs and tap these to assist the LGUs in organizing project beneficiaries to be more active partners in sector development.

The province, through the proposed Provincial Water Supply and Sanitation Office, must harness the participation of the private sector in community organizing and training of project beneficiaries. Initially, the provincial CD Specialist should make an updated inventory of all NGOs, CBOs and POs that do work in the province. It must identify and categorize these organizations according to the following: (1) expertise in community organizing and training; (2) sector-related experience in water supply, sanitation, solid waste; (3) expertise in communications planning, information dissemination and education.

#### 9.5.5 Approaches to Participatory Community Development

##### (1) Manner of Participation in Sector Development

There are three levels of service where both the LGUs and the beneficiaries can participate in sector development. These are the following:

- Level 1 – Participation in (1) planning and implementing sector projects in the province/municipality/barangay; (2) the formation, management, operation and maintenance of the WATSAN association, usually a BWSA.
- Level 2 – Participation in (1) planning and implementing sector projects in the province/municipality/barangay; (2) the formation, management, operation and maintenance of the WATSAN association, usually a RWSA.
- Level 3 – Participation in the formation of water districts or LGU-operated waterworks, and in determining acceptability of new projects and corresponding water rates, among others.

##### LGU Participation

The LGUs, to be able to participate fully in all the phases of the sector project, should be made to decide on the type of project and its scope to be implemented in the province that would be appropriate to its ability to support in the long term.

To attain this, the LGU must encourage active community participation for the sector and open venues that will allow the beneficiary communities actual involvement in all the

phases of project development such as in planning and design, monitoring and evaluation. These include activities as project identification, site selection, water rate setting, managing the WATSAN association, and the operation and maintenance of the constructed facilities.

It is recommended, therefore, that the LGUs utilize the following approaches to facilitate various levels of community participation:

- a) **Information Sharing.** In community projects where external assistance is provided, project planners and implementors should not only share information with beneficiaries to facilitate collective and individual action but should share information as a means to assess the demand of the beneficiaries as they disclose their felt-needs and experience to the planners and implementors. This arrangement enables both sides come to understand and perform their tasks better. Information sharing/demand assessment can be achieved through formal and informal meetings, house-to-house visits or surveys and/or barangay meetings.
- b) **Consultation.** The LGUs should consult the beneficiaries on key issues during all the stages of a project cycle in order to increase their level of community participation. This also gives the beneficiaries the opportunity to interact freely and provide valuable feedback to the planners and implementors. In WATSAN projects, people should be consulted as early as the planning/study period when level of service, facilities sites, costs and other important data are determined. Consultation will be crucial during the construction of facilities, as it is in this stage that participation is most needed through the provision of free labor and donation of locally available materials.
- c) **Decision-making Role.** The LGUs should give the beneficiaries a genuine decision-making role in planning and implementing sector projects, exclusively by the beneficiaries alone or jointly with others on specific issues or aspects of a project. Decision-making implies greater control or influence on the project and, therefore, a higher level of community participation.
- d) **Initiative or Action.** The LGUs should provide the beneficiaries ample room to take initiative in terms of actions and/or decisions pertaining to a project, such as initiating the organization of a WATSAN association, requesting for training, and upgrading its system from one service level to another.

### Beneficiaries Participation

There are many ways that the beneficiaries participate in sector projects. These can be categorized into four ways, namely:

- a) The Provision of Free Labor and/or Materials. The beneficiaries should continue to contribute needed labor and materials, as this is one way of increasing the people's identification with the system being built. But, contributing labor or donating materials as a demonstration of participation should not be the only form of participation available because pride of ownership is also dependent on what the people's other priorities might be.
- b) The Sharing of Costs. Project beneficiaries should also be made to contribute in cash or in kind in maintaining the system – an indication that they value the service and are committed to keeping the system in good working order. This sharing of costs, through cost recovery schemes or O&M agreements, may not in themselves be a reliable indicator of local commitment, if the average community members and, in particular, women have not been involved in decisions concerning the system. Thus, other forms of participation are recommended to be explored.
- c) Participation through Contractual Obligation like MOAs. The participation of the beneficiaries in the project can be detailed in a listing of the roles and responsibilities that apply to each partner in the project, that is, national government with the LGU, and the LGU with the community. To make these requirements more formal and binding, a contract or a Memorandum of Agreement may be drawn. The elements to be considered in the MOA should be the how to solicit the continuous support of the community's leadership, the WATSAN association's leadership, and the maintenance volunteers in order to keep the WATSAN association and its facilities functioning.

It is recommended that the participation of the beneficiary community should, therefore, shall be demonstrated through: (1) the organization of water and sanitation committee in all BDCs that would coordinate and monitor local contributions in the sector; (2) the organization of a WATSAN association that will promote, manage, operate and maintain the system; (3) the training of volunteer mechanics, pump operators and other technicians.

It should be noted, however, that this approach might not sufficiently involve the average person in the community or barangay, since agreements made with the

community leadership and presented at large meetings may not be fully understood by the mass community. So, this must still be augmented by other forms of participation.

- d) Participation through Community Decision-Making. This is the most highly recommended form of participation because it creates a strong sense of local responsibility for using the improved WATSAN resources well and sustaining these in good order. The community's participation, therefore, must evolve and be developed through participatory community development and education processes (explained later in this report) which must involve both the male and women members of the community in decision making right from the start.

The measure of success can be confirmed by: (1) the collective decision to organize the community WATSAN association where the members can articulate what responsibilities they are willing to assume in the general management, operation and maintenance of the WATSAN facilities; (2) the collective decision on matters pertaining revisions in project plans and designs and the type of training required that shall reflect the demands of the people in the community; (3) the collective decision on the type of WATSAN organization and level of service suitable for the community; and (4) the collective decision for the criteria on site selection and water fees to be charged, among others.

## (2) The CD-CO Process

For Levels I and II service, it is suggested that the Province should utilize and/or adopt the Community Development Process developed from the recent WATSAN UNDP-PHI assisted project, and modify this to suit local conditions and requirements. The recommended typical CO-CD process or manner for Levels I and II comprises three phases of community activities.

The first phase, called Formation of Organization Phase, consists of activities intended to mobilize the members of the community. The second phase, Development of Organization, involves activities aimed at building the capability of the user's group that includes training. The third phase, Consolidation of Organization, consists of activities that strengthen the capacity of the user's group to sustain the operation of the association. (refer to Supporting Report for the Detailed Community Development Process).

As entry point of all development activities, the BDC is primarily responsible for the identification and prioritization of sector projects/needs. The decision whether to accept

Level I or II facility and the council's counterpart shall emanate from the BDC. In this way, the community demand could be assessed and the support and commitment of the barangay council secured.

Once the BDC decides to undertake the project, the Barangay CD Coordinator, with assistance coming from the provincial and municipal CD Specialists and NGOs hired for the purpose, must undertake a barangay survey to validate the assessment of the BDC as compared with the beneficiaries' demand for the level of service. The survey will also provide the information on the users' willingness to take the responsibility for the O&M of the facilities, willingness to pay and to be trained on O&M as well as the provision of local counterpart. Such discussions will generate a demand assessment from the barangay officials to be validated and/or confirmed against the results of the barangay survey. The survey results, together with the spot map, must be presented to the community for further validation and/or confirmation (refer to the Supporting Report for the Community Organizing Handbook for Water Supply and Sanitation)

In forming the water districts, LWUA, in coordination with the LGUs concerned, conducts a series of sectoral consultations with the community. Since water districts are formed at the option of the LGU, LWUA first consults the people, through a succession of public hearings, to arrive a consensus on whether or not to form the water district. LWUA also encourages the community to participate in the selection of the WD's' five-man board of directors, who are nominated from various sectors. Once formed and operating, the water district conducts regular dialogues with its concessionaires on issues such as water rates formulation and adjustment, expansion program and other matters that may affect the people-WD relationship.

#### **9.5.6 Information, Education, and Communication (IEC)**

In the long term, it is the power of information, education and communication programs that would sustain the gains of the sector. Proper attitudes and values towards water and sanitation would be developed only if the LGUs and the users are fully informed of sector developments, opportunities and projects and made thoroughly aware of their responsibilities towards sustaining the operation and management of WATSAN facilities. Thus, IEC should be looked upon as a long-term activity, which should ideally start as a foundation activity even before a project begins.

It is recommended, therefore, that conceptualizing a comprehensive and systematic IEC program be undertaken from the national levels, down to the provincial, municipal and barangays. For the sector planners and implementors, an IEC program would foster interest and support needed from local officials and thus pave the way to a smoother implementation of projects in the national, provincial, municipal and barangay level. On the side of the people, an IEC program would promote better awareness and understanding of the benefits and responsibilities, thus giving them a basis for better decisions for the sector.

#### (1) National

As an interim measure, the DILG's WSS-PMO should periodically provide information on sector policies, plans, initiatives and programs for regular dissemination to the public, as well as to its regional and provincial offices. It can do so by utilizing the Department's Public Information Office (PIO) and other existing communication linkages with the LGUs, as well as the government information and mass media networks, such as the Philippine Information Agency, Philippine Broadcasting System, and PTV-4.

In the medium term, the DILG's WSS-PMO should work for the creation of a public information unit within the PMO to take care of multifarious IEC tasks, such as, but not limited to: (1) planning and execution of a nationwide comprehensive public information and education program on water supply and sanitation utilizing the print, broadcast and television; and (2) undertaking capability and capacity building programs on IEC for provincial and municipal counterparts.

In the long term, the WSS-PMO should introduce WATSAN education formally into the school system, as an enhancement in both the grade and high school curricula. Simultaneously, it should attract national and local vocational schools to offer courses in support of the operation and maintenance of WATSAN facilities. As such, it should officially come into agreements with the Department of Education, Culture and Sports (DECS) and the Technical Education and Skills Development Authority (TESDA).

In order to maximize existing IEC programs on the national level, it is recommended that the DILG link or tie-up with the Local Water Utilities Administration (LWUA) which already has a nation-wide IEC program on water utilizing all communication media.

#### (2) Provincial

The proposed Provincial Water Supply and Sanitation Office, through the CD Specialist, shall be responsible for filtering down information on sector developments to the

municipalities, barangays, as well as the general public utilizing all forms and channels of communication. As an interim measure, the CD Specialist shall utilize the provincial public information officer for the purpose of information dissemination only. However, it should slowly develop its own expertise in information and communications planning so that the comprehensive IEC program can be further improved and better executed in the long term.

It is suggested that relevant provincial events (meetings, fora, training programs, etc.) be utilized to discuss sector projects and distribute informational/educational materials. General information, that is, news on current projects, technologies, health and hygiene tips – can be channeled through local radio stations. These strategies should be replicated at the municipal levels. The Province, assisted by the DILG-WSS PMO, should sponsor an IEC seminar workshop among the municipal CD Specialists.

### (3) Municipal

It is suggested that the IEC strategies of the province be adopted by the Municipal Sector Liaison Team, particularly the assigned CD Specialist. If broadcast media facilities are absent in the municipality, it is also recommended that the CD Specialist employ the interpersonal approach in communication, such as group discussions, community meetings, dialogues, household visits, and one-on-one talks with the barangay officials and people. Furthermore, the municipality should maximize the use of non-traditional media in disseminating information, such as school exhibits, fiestas, special town events and the local movie houses. The CD Specialist may seek the assistance of the water districts in their respective localities. The water districts generally implement comprehensive IEC programs.

### (4) Barangay

Aside from CD work, the barangay CD Coordinator shall also disseminate all sector information to the barangay officials and constituents. Thus, the CD coordinator should endeavor to attend all regular barangay council meetings to discuss relevant sector information. For urgent information, the coordinator can call special dialogues or meeting to announce important messages. He/she can also take advantage of special community gatherings such as civic and religious group meetings, PTA (school) meetings, to distribute informational/educational materials. The coordinator can also print messages on posters that can be placed in strategic places.

### **9.5.7 Health and Hygiene Education**

In the medium term, the proposed Provincial Water Supply and Sanitation Office can adopt the health and hygiene education program of the Department of Health (DOH) which already has a comprehensive program planned at the central level and executed by its local health offices. This Office should ask the assistance of the PHO in the implementation of a province-wide health and hygiene education program, utilizing existing channels and methods as well as available materials. It should also include health education information in its training programs for WATSAN associations.

It was revealed that people learned about health and sanitation mostly from health workers and from the radio/TV. The province can therefore take a cue from this by giving emphasis on the utilization of health personnel to undertake health education and on airing health education materials over the radio.

## **9.6 Gender**

### **9.6.1 General**

The LGUs must recognize and give vital emphasis on the role of gender sensitive participation as critical factors in ensuring the project's success. Sustainability of water supply and sanitation services and hygiene programs depend on responding to the demands of men and women in communities. Use, maintenance and financing of water supplies and sanitation systems require the participation of both the men and women in the planning, implementation and monitoring and evaluation of projects.

This chapter presents the recommendations on how to harness the equal participation of the men and women of the beneficiary community in sector projects in order to ensure that the gains derived from WATSAN projects are sustained long after these have been constructed.

### **9.6.2 LGUs and Gender**

The LGUs should always conduct gender sensitivity analysis when determining water supply and sanitation projects that are appropriate for the men and women members of the beneficiary community. This means that the difference between men's and women's activities, roles and resources will have to be identified in order to determine their development needs.



Through this, the constraints and opportunities of both men and women within the water and sanitation sector can be ascertained, a process that can help in the provision of services that men and women want which are appropriate to their circumstances. Thus, data collected, such as, but not limited to, population, type of participation, morbidity and mortality rates, shall be gender-disaggregated. Among others, the following data shall be collected:

- National-level policies and programs on gender;
- LGU-level policies and programs on gender;
- Local NGOs and their programs in promoting gender and development;
- Experiences of sector agencies in mainstreaming gender in sector projects;
- Actual views of women and men regarding their demands and their perceived roles and responsibilities.

It is important to note that since gender issues are usually localized, all concerned LGU staff be equipped with knowledge of gender and development as well as gender analysis skills prior to making any approaches to the target community. In this connection, to ensure the gender responsiveness of WATSAN projects, the province should be trained through a Trainers' Training Program on Gender, and later on transfer what has been learned to municipal/barangay staff involved in sector projects.

### **9.6.3 Gender Participation in WATSAN Projects**

It is recommended that both the men and women of the beneficiary communities must be given equal opportunity to be appointed in (1) the water supply and sanitation committee in the barangay; (2) the Board of the WATSAN association to be organized; (3) and other committees/task forces that may be formed in order to realize sector projects and goals.

On WATSAN training, both genders should be given equal chances in articulating the type and duration of training they would like to attend. The same should be done in determining the functions that the men and women would like to assume in the WATSAN association, especially in operation and maintenance. In other words, the roles traditionally held by men or women should be made available to the opposite genders as well.

A simple checklist, developed from the OECF-funded Special Assistance for Project Sustainability of the Rural Water Supply Project III, of the issues to be considered for gender responsiveness is presented below:

- a) For construction of Level I facilities and sanitary latrines:
- Are the designs (specifications) of Level I facility and sanitary latrines friendly to both sexes and based on their needs?
  - Does system/procedures allow both sexes to participate in construction?
- b) Capacity enhancement program:
- Are all project personnel aware of gender issues?
  - Is gender training incorporated in the capacity enhancement program?
- c) Community development program:
- Can both women and men participate in any kind of meeting?
  - Can both sexes freely express their opinion in the meeting?
  - Is all uncompensated work shared equally among women and men?
  - Do both women and men participate in the decision process for determining construction equity (fees and labor)?
  - Do both women and men participate in the WATSAN association's formation process?
  - Are both sexes represented in WATSAN association as board members?
  - Do both sexes participate in a pre-construction/formation training?
  - Are all training opportunities shared by both sexes?
  - Do both sexes participate in O&M activities?
  - Do both sexes participate in monitoring and evaluation activities?
  - Will the project effects be shared equally among women and men?

## 9.7 Human Resources Development and Training

The training is a planned strategy to strengthen individual competencies in relation to attitudes, skills and knowledge, to meet appropriate standards of excellence to achieve the goals of the program. The objectives of training are individual competence, organizational effectiveness and efficiency, and national development. Training helps ensure the availability of qualified and able manpower, the shortage of which is considered as one of the major obstacles to improvements in the water supply and sanitation sector.

In planning and implementing training activities, trainers must keep in mind that there are two processes simultaneously taking place - skill/knowledge acquisition and attitude formation. To illustrate the process, a brief exercise may be conducted during the session to show the two simultaneously occurring processes - those related to task and/or subject on one hand, and those related to attitude formation on the other.

### (1) Training Principles

The effective application of teaching and learning principles is vital to achieve optimal learning. Trainers must bear in mind the following principles:

- 1) **Perceived Purpose:** Participants should recognize why a particular topic is being discussed or presented, i.e., the relevance. This is the first element that should be established and agreed upon in any training activity.
- 2) **Graduated Sequence:** The subject matter should be presented in a logical sequence, which can be followed by the trainees.
- 3) **Knowledge of Results:** At every point during a training activity, participants must know how well they are performing, i.e., feed-back.
- 4) **Appropriate Practice:** If the objective of a training effort is to develop specific skills, there must be opportunities to practice and demonstrate these within the training activity.
- 5) **Individual Differentiation:** Attention must be given to the fact that every person learns at a different pace.

### (2) The Training Process

- 1) **Needs Assessment:** The first step is to determine the problem for which a training solution is required and will be able to make an impact. A careful analysis is necessary because the training should address and focus on precisely those deficiencies in knowledge, attitudes or skills that hinder reaching certain goals. However, one must bear in mind that not all problems or training alone can solve deficiencies. In most cases, complementing interventions will be needed.
- 2) **Setting Learning Objectives:** In the second step, the learning objectives need to be set. Training designers shall present these objectives in behavioral terms, i.e., what should a participant be able to do at the end of the training period (not what the session will accomplish). It is necessary to formulate them with care because they also serve as criteria for evaluation at the end of the training process.
- 3) **Methods and Techniques:** Different methods of training are appropriate for different types of learning. The methodology should therefore be appropriate with the set learning objectives. Participatory methods, like group exercises, group discussions, role plays, etc. are most effective in attitude formation. The choice of methodology is

mainly based on the learning principles and objectives. Human factors, resources available (time, facilities), and the subject area will also affect the choice.

- 4) Evaluation of Training: Training evaluation assesses whether a course was adequately designed and implemented to meet the set objectives.

#### (4) The Training Design

Training design is more than simply putting up a schedule. It is a plan of action to be followed by a trainer in implementing his activities. It consists of:

- 1) Rationale: Why set up a training program in the first place, and why would people have an interest in it?
- 2) Learning objectives: Workshops should aim to develop a strong understanding of concepts like: participatory development, demand, etc. An ability to analyze and apply participatory development in their local setting or to articulate water supply and sanitation demand and supply concepts are key capacity building objectives. Methods should be more participative and consultative, i.e., allowing planners to interpret the principles with an awareness of their local conditions.
- 3) Assumptions about the participants' background: Define who will best benefit from the program - the target audience.
- 4) Curriculum: Determine what the potential trainees need to know before they participate in the program; decide on the training methods and materials; draw up session plans and sequence the sessions logically.
- 5) Evaluation: Decide how the program itself and the participants are evaluated.
- 6) Administrative aspects: The budget for the program, the total costs, possible costs to the trainees. Other important administrative concerns are things like housing (for the program itself, for facilitators and trainees), registration of trainees, logistics, etc.

#### (5) Responsibilities

Needs assessments will be conducted as the basis for the design of the courses. Participants will be selected based on their tasks and responsibilities. The PWSU will establish and maintain a reference library and information/ documentation center, which will include training materials and equipment to service needs of the municipalities. The DILG, in

coordination with the International Training Network (ITN) - Philippines and other agencies and NGOs, will provide inputs to these training activities.

The LGU role is not only to run courses but also to ensure that training programs take place and are effective. As an alternative, training activities may be contracted out to well-functioning water districts. TESDA training centers have been established and can be tapped to provide testing and skill certification for caretakers. TESDA regularly conducts plumbing and pipefitting courses and it administers the national trades certification system. Finally, there are technical and vocational schools which may be tapped to provide technical training and to award diplomas and certificates to those who undergo their programs. These schools, however, do not have any special courses for water and sanitation caretakers at this time. A program can be set up with these institutions.

External training assistance must be viewed as participation within this process. Its purpose is to guide and motivate (not replace) local trainers. Local trainers need to go through the process of designing courses or developing materials, etc. Many learning opportunities are missed when non-local experts replace local trainers in doing need assessments, course designs, materials development, etc.

1) For staff operating Level I systems

- a) Preparatory orientation training activities will be organized leading to the formation of associations. These community-level orientation activities will consist of briefings about the health situation and the relationship between health, water supply and sanitation. The LGU program for water and sanitation improvement will be presented, including policies and procedures for accessing technical and financial support.
- b) Technical training of caretakers will consist of: water source protection (for deep wells, shallow wells, spring boxes and surface water intake structures); water quality protection; operation and maintenance of hardware (pumps, pipes) including simple replacements of parts; plumbing and pipefitting.
- c) Management training will include: fee setting, bookkeeping and financial management, preparation of improvement plans and monitoring and reporting requirements. Detailed policies of the LGU will be discussed.
- d) Current training activities and materials for the BWSAs by the DILG will be reviewed and adopted by the municipalities. UNICEF assisted DILG in updating these materials.

2) For staff operating Level II systems

- a) Preparatory orientation and training activities will be organized leading to the formation of associations. These community-level orientation activities will consist of briefings about the health situation, the relationship between health, water supply and sanitation. The LGU program for water and sanitation improvement will be presented, including policies and procedures for accessing technical and financial support.
- b) Training of technicians and operators will generally consist of: water source protection (for deep wells, spring boxes and surface water intake structures); water quality protection; water storage; chlorination; operation and maintenance of hardware (pumps, pipes), including simple replacements of parts; plumbing and pipefitting. Pump operation and electrical controls will be a major focus of this program. A topic on metering will also be presented.
- c) Management training will generally include: organization aspects, operations policy formulation, water rate computation, preparation of bills, bookkeeping and funds management, preparation of improvement plans and monitoring and reporting requirements.
- d) Training activities for the RWSAs prepared by LWUA will be reviewed and adopted by the municipalities.

3) For staff operating Level III systems

- a) Technical training of engineers, technicians and operators will generally consist of: water resources conservation and protection (for deep wells, spring boxes and surface water intake structures); water quality protection; hydraulics; transmission lines; water storage; treatment and chlorination; construction inspection; and operation and maintenance of facilities. Implementation of a metering program will also be discussed. Methodologies for feasibility analysis for system expansion will be presented.
- b) Policy and management training will include the full commercial practices system including budgeting and cost controls, bookkeeping and accounting, procurement, maintenance of stock inventories, rate formulation, collection systems, managing customer accounts and records, customer relations, and capital budgeting. The policy formulation process and the various areas of policy for utility operation will be presented in detail. Long-range planning, financial analysis and review, and monitoring with reporting requirements will be discussed.

c) The DPWH, LWUA and MWSS developed a comprehensive set of programs and materials for both technical and management training. Inputs from these three agencies and also from local water districts should be sought.

4) Training of PWSU staff and municipal liaison staff: Based on the task descriptions presented, the following training programs will be required. At least one program has to be conducted annually for each of the workshops and courses. The programs will explain the basic concepts and procedures. Succeeding programs will review the adopted policies and procedures and lay the bases for improving operations at the provincial and municipal levels. Municipal sector liaison staff will participate in these programs. They should be organized by the PWSU; except for the Provincial Coordinators' Workshop, which is best handled nationally by DILG to provide a wider base for sharing of experience among the PWSC. In addition, DILG will provide basic guidelines for the design and implementation of the workshops and courses.

a) The Provincial Coordinators' Workshop will be an annual activity intended to facilitate the exchange of experiences among the coordinators. New national policies, opportunities and constraints will be discussed. Case studies will be presented. Sector management & technical experts will be invited to speak on current issues and trends.

b) The Community Development Course is intended for trainers, community development specialists, and municipal liaison staff. The scope of the course will include: social marketing & public information programs, community organizing skills, training skills (needs assessment, design, implementation & monitoring).

c) The Technical Course seeks to acquaint technical staff at the provincial and municipal levels on the physical aspects of the sector. Its scope will generally include: water resources, overview of water supply systems (source, transmission, treatment, storage, distribution), drilling and source development, water quality protection, feasibility study and design procedures and standards, and operation and maintenance.

d) The Project Monitoring Seminar will provide an overview of the monitoring functions and the sector reporting requirements. The process of sector monitoring and updating the PW4SP will be presented in detail. Project monitoring procedures will also be discussed.

#### **(4) Health and Hygiene Education**

1) Policy: The LGUs shall establish hygiene education programs through appropriate methods and channels in consonance with the on-going national program. These shall

include immediate short-run programs: information campaigns; and long-term value formation interventions, possibly through the formal school system. If the LGUs are to attain the full economic benefits of improved water and sanitation services, household behavior and hygiene need to be addressed. Three approaches will be used:

- a) **Community-based Approach:** Direct house-to-house campaigns can be implemented through the Rural Health Units, as part of their current functions. Specialized training of the BIWs should be considered. Meetings by house "clusters" to discuss relevant health issues can also be organized. This will also be done through direct person-to-person contact with PHO staff, the municipal health staff, midwives, sanitarians, and the barangay health volunteers. Special presentations can also be done during the regular meetings of community-based socio-civic clubs. Various flip charts and IEC (Information, Education and Communication) materials are already available.
  - b) **School-based Approach:** Students are the main targets of this approach, either directly or through their teachers. Special focus activities, such as Water and Sanitation Week or Nutrition Week can be introduced, with programs or convocations to make the student aware of the issues and solutions. Posters, flip charts, and other audio-visual materials will be required.
  - c) **Media-based Approach:** This approach utilizes radio and print media to introduce and reinforce health messages. Many NGOs and the Philippine Information Agency (in coordination with the DOH) have developed interesting and attractive materials.
- 2) **Responsibility:** The community development and training specialists at both provincial and municipal levels will be responsible for the health and hygiene education function. The CDTSS will formulate an action plan and implementation will be done by the municipal liaison staff and other local officials. At the barangay level, its implementation will involve the close coordination among the midwives, the barangay health workers and the Committee on Health of the barangay government. Materials for this efforts have been previously developed and can be found with the various PHOs and RHUs. UNICEF provided strong support in the preparation of these materials.
  - 3) A continuous health and hygiene education program will be launched by the LGU. Simple and clear messages and approaches will have to be defined. These messages may include the following: relationship among health, water supply and sanitation; sector opportunities and services available at the rural health units. The relevance of these or other messages will have to be determined by the municipal sector liaison.

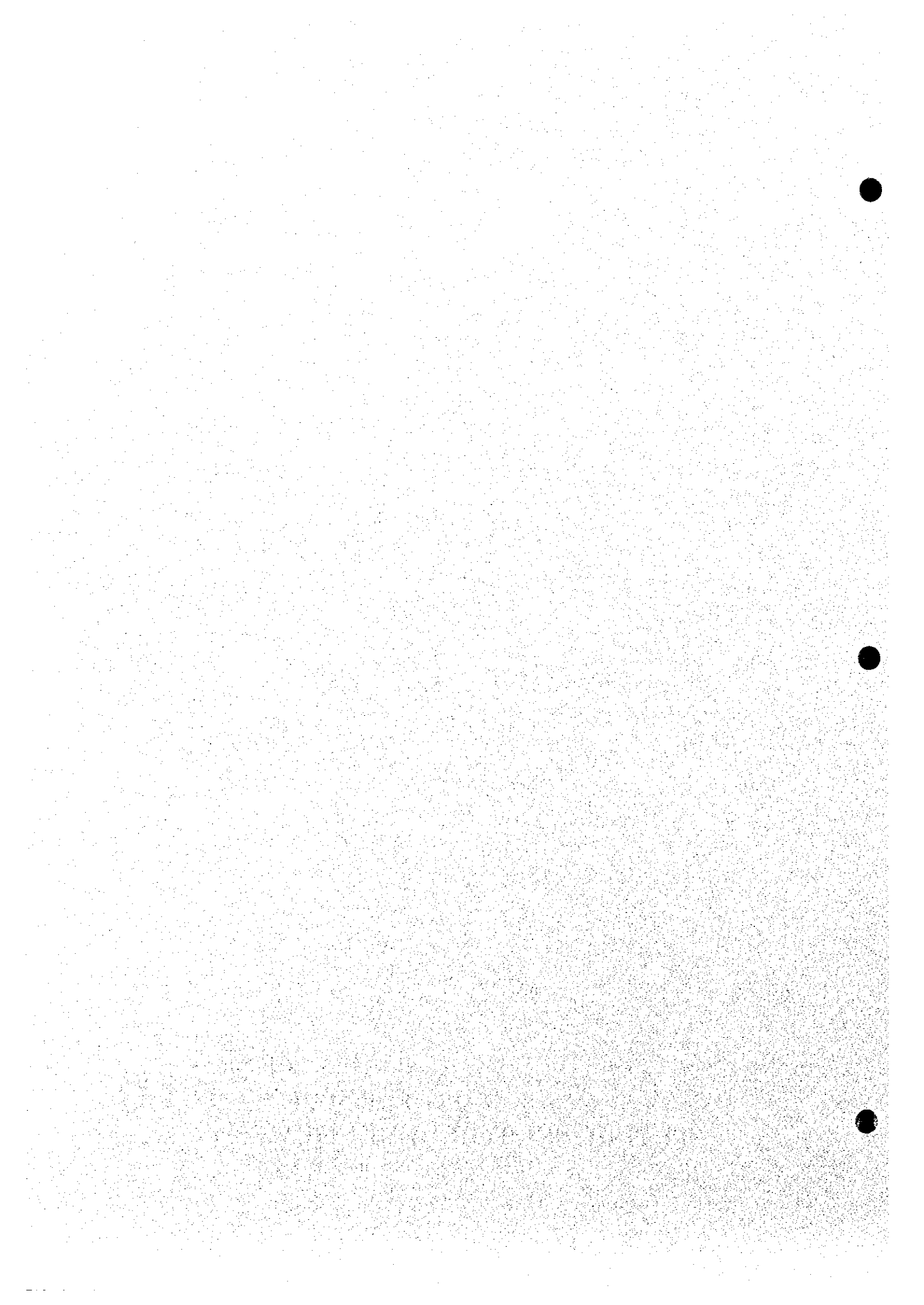


Chapter

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**COST ESTIMATE FOR  
FUTURE SECTOR DEVELOPMENT**

**10**



## 10. COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT

### 10.1 General

The total investment cost required in the two phases was studied for implementation of the future requirements identified in Chapter 8 and Chapter 9. The investment cost is defined to include direct cost for construction/rehabilitation of required facilities and sector management, as well as physical and price contingencies. Cost requirements for the equipment and vehicle are discussed as a reference to the LGUs and considered in the long-term development. In addition, recurrent cost is estimated for the operation and maintenance of facilities.

Conditions and assumptions to come up with investment cost were established covering all sub-sector components referring to the National Sector Master Plan and current standards of relevant sector agencies (DPWH, DOH and LWUA). Of the total investment cost required, only construction cost for sector components by municipality was included in this Chapter. The total investment cost is presented in Chapter 11 as a total requirement of the province.

With regard to construction cost, unit construction cost per person/household/facility was first prepared under contract-out basis for respective sub-sector component facilities in 1998 price level (refer to Supporting Report).

Recurrent cost was also included in this Chapter taking into account of regular operation, spare parts and equipment replacement for sector components concerned.

### 10.2 Assumptions for Cost Estimates

#### (1) Unit Construction Cost

Unit construction cost per person (household or facility) of each sector component was estimated based on the current standard unit cost of relevant sector agencies and typical standards developed for previous PW4SP as contract-out basis in 1995 price level. Referred cost data are urban water supply of LWUA, rural water supply of DPWH and sanitation of DOH. For price adjustment of construction materials, the NSO price index of 1995 to 1998 was referred to.

Unit construction cost consists of, in general, direct cost (mobilization/demobilization, material and labor), indirect cost (profit and VAT of contractor) and government expense (detailed engineering, institutional development and water quality analysis-when deemed necessary).

Freight cost of construction materials excluding indigenous materials, i.e., sand and gravel, was counted for sanitation and rural water supply in consideration of the distance from Manila. The cost is estimated at fixed percentage (8%) based on the standard practice being adopted by sector agencies.

Table 10.2.1 shows a summary of unit construction cost and their descriptions are given below (details are referred to Supporting Report).

Urban water supply:

- Unit cost for three different sizes of Level III system covering served population of 5,000, 10,000 and 15,000.
- Unit cost for Level III system shall be applicable to both systems utilizing spring source and deep well. However, especially in case of utilization of spring source, it is desirable to confirm by surveying in the implementation stage, since the location (distance/elevation) of untapped spring might affect the construction cost.

Rural water supply:

- Unit cost for four types of Level I wells (shallow well at 18m in depth and deep wells at 40, 80 and 120m in depth).
- Unit cost for deep well was estimated in combination of open hole with gravel packed well and natural gravel packed well based on water source study results. The profile of the two kinds of wells, gravel packed and natural gravel packed wells is assumed to be 95% and 5%. Required costs for iron removal facility shall be included as required for deep wells at high iron contained area (details are referred to Table 7.3.1, Main Report).
- Unit cost for Level I spring development was estimated considering system upgrading to Level II adopting 63mm diameter of transmission line.
- Unit cost for Level II system to cover 600 served population.

Sanitation:

- Household toilet: (Construction cost is not considered since it is out of public works; unit cost is a reference for financial study in terms of affordability.)

Unit cost for four types of sanitary toilets (flush, pour-flush, VIP and Sanitary Pit Latrine) to cover one served household in urban or rural areas. Cost of flush toilet includes costs for demolition, water closet and water line.

Table 10.2.1 Unit Cost of Facilities by Type and Service Level

Sector Service Level	Unit Construction Cost per Facility (Pesos)	Service Coverage		Unit Cost		Rehabilitation Cost of Level I Deep Well (Pesos/Well)
		Served Population	Served Households	Pesos/Person	Pesos/ Household	
Urban Water Supply	<i>New System</i>					
	For 5,000 population	5,000	N/A	5,100	N/A	
	For 10,000 population	10,000	N/A	3,800	N/A	
	For 15,000 population	15,000	N/A	3,600	N/A	
	<i>Expansion</i>					
	For 5,000 population	5,000	N/A	4,700	N/A	
Urban Water Supply	For 10,000 population	10,000	N/A	3,600	N/A	
	For 15,000 population	15,000	N/A	3,500	N/A	
	<i>Level II</i>	600	120	2,290	11,500	
Rural Water Supply	<i>Level I</i>					
	<i>Deep Well</i>					
	40 meter depth	N/A	15	N/A	24,270	
	80 meter depth	N/A	15	N/A	36,000	78,400
	120 meter depth	N/A	15	N/A	47,140	
	<i>Shallow Well</i>					
Rural Water Supply	84,300	N/A	15	N/A	5,620	
	737,600	N/A	15	N/A	49,180	
Sanitation	<i>Household Toilet</i>					
	Flush	N/A	1	N/A	23,000	
	Pour Flush	N/A	1	N/A	14,100	
	VIP Latrine	N/A	1	N/A	7,100	
	Public School Toilet	250	N/A	1,000	N/A	
	Public Toilet	361,600	N/A	N/A	N/A	
	Urban Sewerage			7,300		
	Disinfection of Level I Wells	70				

- Public school toilet:  
Unit cost for public school toilet was estimated in combination of toilet facility with 5 toilet bowls and 5 units of classroom toilet to cover 200 served students. The profile of the two kinds of toilet facility is assumed to be 50% each.
- Public toilet:  
Unit cost for one facility with 6 toilet bowls.
- Well disinfection:  
Unit disinfection cost per well based on DOH standard cost. The unit cost shall be applied to all existing and new wells once a year.

Urban Sewerage:

- Unit cost per served population. Preliminary estimates derived from the Philippine National Urban Sewerage and Sanitation Strategy and Feasibility Studies report.

(2) Unit Cost of Equipment

Unit cost of equipment shown in Table 10.2.2 was prepared based on the standard unit cost and recent procurement experience of the relevant sector agencies (details are referred to Supporting Report).

**Table 10.2.2 Unit Cost of Equipment and Vehicle**

Name of Equipment	Unit Cost (Peso 1,000)
Truck-mounted rotary drilling rig	32,314
Truck-mounted percussion drilling rig	25,582
Well rehabilitation equipment	280
Service truck with crane	1,200
Support vehicle (Pick-up with winch)	590
Refuse collection truck	2,057
Maintenance tools	11
Water quality testing kit	16

(3) Sector Management Cost

Sector management cost consists of:

- Engineering studies (F/S, D/D and construction supervision) for water supply, public toilet and school toilet facilities.
- Community development and training including health & hygiene education and logistic support.

Cost of engineering studies was estimated based on the fixed percentages to the total construction cost; 9% for F/S and D/D and 4% for construction supervision.

Community development and training with logistic support was also estimated on the same manner; 12% of respective construction costs for rural water supply and sanitation, and 3% of construction cost for urban water supply.

#### (4) Recurrent cost

Recurrent cost was estimated for water supply and sanitation (school and public toilets) facilities to cover the regular operating cost and the cost for spare parts and equipment replacement based on the following cost assumptions, while household toilet is assumed to be maintained by the owner.

Regular operating cost normally includes salaries of operation staff, electricity, fuel and chemicals. Due to the nature of this cost, it is only applied to urban water supply (Level III system). As a typical unit cost being applied to preparation of PW4SP referring to LWUA data, 365 Pesos/household/year was employed.

Cost for spare parts and equipment replacement was considered by different service level as described below.

##### Level III system:

- Mechanical and electrical equipment has normally a life cycle of 8 to 12 years and is considered in depreciation cost, i.e., 10% per annum. Assuming that the equipment cost comprise 10% of construction cost, annual depreciation will be 1% of the construction cost.
- Accordingly, cost of spare parts was assumed to be 10% of the equipment cost or equivalent to 1% of the construction cost.
- As a whole, 2% of the construction cost was applied for the cost of spare parts and equipment replacement.

##### Level II system:

- Operation and maintenance (O&M) cost of Level II system utilizing spring sources includes minor repair of pipeline and communal faucets (1% of the direct cost) and salaries of maintenance staff.
- A unit cost of 180 Pesos/household/year was assumed for cost estimates.

##### Level I facility:

- O&M cost of Level I facility simply includes spare parts of hand-pump and caretaker.
- A unit cost of 100 Pesos/household/year was assumed for cost estimates.

School and public toilets:

- O&M cost includes the salaries of maintenance staff, cost of pumping sludge from septic tanks (periodically) and rehabilitation cost (for depreciation).
- For cost estimates, 5% of the construction cost was applied per facility per year.

Management cost:

- Management cost of water supply, sewerage and sanitation sector is part of the cost required for public services of LGUs mainly consisting of salaries of officers and workers and normally included in the annual budget of each LGU. The rest of management cost, such as equipment for information processing and dissemination was considered as part of logistic support under the sector management cost. Owing to the nature of this cost item, the management cost pertaining to salaries of officers/workers depends largely on the population size and institutional set-up of each LGU.
- Management cost was not estimated in this PW4SP considering the above mentioned reasons.

### 10.3 Cost of Required Facilities and Equipment

#### 10.3.1 Cost of Required Facilities

The construction cost of required facilities as public investment of LGUs was summarized in Table 10.3.1 by sub-sector by municipality for target years. In this regard, the construction cost of household toilets is limited to the procurement and distribution of toilet bowl for pour-flush type toilets as being implemented by DOH under the FW4SP (refer to over-all construction cost requirements, Supporting Report).

During the medium-term development period, a total of 1,033.4 million Pesos will be required for construction of required facilities. Of the requirements, urban water supply and rural water supply will share 40% and 42%, respectively. While, remaining 18% will be required for urban and rural sanitation. With reference to urban water supply, some cost required would be managed by newly created WD/s, which is out of public investment to be undertaken by LGUs.



Table 10.3.1 Construction Cost of Required Facility by Municipality

Unit: P. 1,000

Name of Municipality/City	Phase I (2005) Requirements						Phase I (2010) Requirements								
	Urban Area			Rural Area			Urban Area			Rural Area					
	Water Supply	Sanitation	Sub-total	Water Supply	Sanitation	Sub-total	Water Supply	Sanitation	Urban Sewerage	Sub-total	Water Supply	Sanitation	Sub-total	Grand Total	
Bago City	23,500	3,325	27,025	34,834	9,574	44,407	71,432	8,536	3,864	130,707	216,107	62,053	38,682	100,734	316,841
Binalbagan	18,161	3,064	21,225	12,624	3,047	15,671	36,896	53,018	1,576	102,558	157,151	17,086	10,176	27,262	184,414
Cadiz City		3,202	3,202		9,040	9,040	12,242	27,257	5,931	153,453	186,642	17,522	27,237	44,758	231,400
Calatrava		3,465	3,465		4,816	4,816	8,282	10,746	1,296	47,552	59,594	23,304	18,115	41,419	101,013
Candoni	2,132		2,132	3,688	1,409	5,097	7,229	11,153	1,193		12,346	9,672	5,348	15,020	27,365
Cauayan	16,112	3,186	19,298	17,444	5,615	23,059	42,357	71,915	3,804	92,119	167,838	26,981	21,345	48,326	216,163
Enrique B. Magalona	18,220	2,098	20,317	9,868	1,952	11,820	32,137	94,735	3,104	136,890	324,728	19,719	6,611	26,330	261,059
Escalante	21,888	4,693	26,581	20,386	5,071	25,457	52,038	130,690	5,488	188,048	324,226	3,688	13,940	17,628	341,854
Himanayan		3,525	3,525		5,204	5,204	8,729	101,988	2,894	128,006	232,888	28,632	17,921	46,552	279,440
Hinigaran	9,339	733	10,072	23,761	269	24,030	34,102	38,231	1,337	53,246	92,813	38,263	19,586	57,849	150,662
Hinoba-an (Asia)	11,970	2,719	14,689	3,246	2,335	5,581	20,270	46,386	1,296	59,940	107,621	2,655	7,721	10,377	117,998
Ilog	18,222	2,463	20,685	5,243	1,401	6,644	27,329	75,110	3,759	101,959	180,828	13,776	4,661	18,437	199,264
Isabela	8,634		8,634	22,125	67	22,191	30,826	35,158	1,424	45,099	81,681	50,065	12,845	62,910	144,591
Kabankalan City	29,412	10,094	39,506	52,425	9,347	61,772	101,278	186,666	10,063	236,995	433,723	201,776	35,385	237,160	670,883
La Carlota City		1,868	1,868	11,611	2,802	14,413	16,281	22,150	1,062	86,257	109,469	9,798	10,265	20,063	129,532
La Castellana	16,690	11	16,700	9,462	366	9,828	26,528	74,809	2,018	107,128	183,955	17,891	14,326	32,217	216,172
Manapla	7,412	1,818	9,230	12,391	3,405	15,796	25,025	18,421	1,314	42,158	61,893	6,809	11,176	17,984	79,877
Moises Padilla				9,566	128	9,695	9,695	34,930	1,107	44,713	80,749	11,379	4,272	15,651	96,400
Murcia	13,545	2,497	16,043	8,092	5,310	13,402	29,445	62,605	4,685	106,624	173,914	2,950	12,246	15,196	189,110
Pontevedra	14,232	1,635	15,866	10,393	2,204	12,598	28,464	49,788	5,881	96,404	152,072	5,188	7,154	12,342	164,414
Pulupandan	12,286		12,286				12,286	47,159	1,427	66,744	115,330	22,682	2,749	25,431	140,761
Sagay City	31,122	7,824	38,946	50,260	8,146	58,406	97,352	129,080	9,663	224,979	363,722	147,960	30,265	178,225	541,947
Salvador Benedicto		362	362		1,172	1,172	1,534				723	2,698	5,441	8,139	8,862
San Carlos City	21,535	2,930	24,466	41,321	7,108	48,429	72,894	50,484	5,438	125,217	181,139	62,350	25,178	87,528	268,666
San Enrique	7,961	701	8,662	4,828	1,007	5,835	14,497	39,697	1,833	49,574	91,104	5,572	3,288	8,859	99,963
Silay City	33,307	4,459	37,766	17,587	5,856	23,443	61,210	162,159	9,196	269,056	440,410	14,176	16,061	30,237	470,647
Sipalay	15,214	1,868	17,082	11,989	4,106	16,095	33,177	64,449	3,420	88,607	156,476	9,793	14,170	23,962	180,438
Talisay City	19,109	3,608	22,717	9,778	3,598	13,376	36,092	83,503	3,548	143,642	230,693	15,402	12,540	27,942	256,635
Toboso	5,715	1,062	6,777	19,639	3,503	23,142	29,919	21,557	934		22,491	24,653	11,906	36,559	59,050
Valladolid		1,763	1,763		973	973	2,735	81,418	3,793	93,082	178,293	4,834	3,351	8,185	186,478
Victorias City	35,557	5,748	41,304	7,602	2,247	9,849	51,153	175,623	6,210	287,146	468,978	14,985	8,789	23,774	492,752
<b>Provincial Total</b>	<b>411,273</b>	<b>80,920</b>	<b>492,193</b>	<b>430,163</b>	<b>111,078</b>	<b>541,241</b>	<b>1,033,434</b>	<b>2,082,416</b>	<b>109,280</b>	<b>13,307,900</b>	<b>5,499,596</b>	<b>892,312</b>	<b>432,745</b>	<b>1,325,056</b>	<b>6,824,653</b>

### 10.3.2 Cost of Required Equipment and Vehicle

The procurement cost of required equipment was estimated as shown in Table 10.3.2 (details are referred to Supporting Report), however, in this PW4SP, one set/unit each of well rehabilitation equipment and support vehicle shall be incorporated in the medium-term investment plan (Phase I). While one set of truck-mounted drilling rig shall be procured by the province in long-term development plan (Phase II) considering budgetary constraints and technical capability at the present time.

Table 10.3.2 Cost of Equipment and Vehicle

Unit; Peso 1,000

Name of Equipment	Unit Cost	Q'ty (set)	Amount
Truck-mounted rotary drilling rig	32,314	NA	0
Truck-mounted percussion drilling rig	25,582	1	25,582
Well rehabilitation equipment	280	1	280
Service truck with crane	1,200	1	1,200
Support vehicle (Pick-up with winch)	590	1	590
Refuse collection truck	2,057	23	47,311
<b>Total Equipment Cost</b>			<b>74,963</b>

Note: Truck-mounted rotary drilling rig is not applicable based on water source study.

N.A: Not applicable

Aside from the above, one set each of maintenance tools and water quality testing kits shall be provided to all municipalities and cities for O&M of Level I facilities (details are referred to Supporting Report).

### 10.3.3 Cost for Laboratory

Required cost for instruments/chemicals required for three (3) new laboratories to be established at existing hospitals in Escalante, Kabankalan City, and La Carlota City is estimated at 1,434,000 Pesos (details are referred to Supporting Report).

### 10.4 Recurrent Cost

Recurrent cost is estimated in 1998 price level as a provincial total of each sub-sector covering existing facilities and additional facilities to be constructed during the medium-term development as shown in Table 10.4.1.

In the year 2005, the recurrent cost will increase to 109.9 million Pesos/year from 81.8 million Pesos/year in 1998, which is 34% increase from the base year corresponding to the implementation of the medium-term development.

**Table 10.4.1 Recurrent Cost**

Unit: ₱ 1,000

Sector Component	Item	Base Year Existing Facilities	2001	2002	2003	2004	2005	Total (2001-2005)
Urban Water Supply	Operating Cost	17,351	17,351	18,735	20,812	22,888	24,272	104,058
	Spare Parts/Equipment	17,470	17,470	18,864	20,954	23,044	24,438	104,770
Rural Water Supply	Spare Parts/Equipment for Level II System	3,066	3,210	3,353	3,353	3,353	3,353	16,624
	Spare Parts/Equipment for Level I Facilities	24,184	24,184	24,848	25,845	26,842	27,507	129,226
Sanitation	Public School Toilets	13,236	13,236	15,178	18,091	21,004	22,945	90,454
	Public Toilets	6,480	6,480	6,666	6,945	7,224	7,410	34,725
<b>Total Recurrent Cost</b>		<b>81,788</b>	<b>81,931</b>	<b>87,645</b>	<b>96,000</b>	<b>104,355</b>	<b>109,925</b>	<b>479,856</b>

Chapter

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**FINANCIAL ARRANGEMENTS FOR  
MEDIUM-TERM DEVELOPMENT PLAN**

**11**

## 11. FINANCIAL ARRANGEMENTS

### 11.1 General

Financial arrangements to attain medium-term (Phase I) targets are sought taking into account potential funds. However, quantitative study is limited to the use of projected Internal Revenue Allotment (IRA). In this connection, this Chapter addresses to identify financial shortfall with reference to available IRA for this sector and to seek comprehensive logistics in terms of acquisition of various funds, augmentation of current practices in the Government assistance to this sector and effective investments and cost recovery.

Available funds (IRA) during the medium-term development period are projected with the use of computer-based programs that allow for the future application to include additional funds that are available. Figure 11.1.1 shows the sector budget allocation in the different administrative levels to come up with total funds available in the province. Figure 11.1.2 illustrates the manner of sector fund allocation to respective municipalities from the national and provincial governments with a detailed study flow availing IRA. Interfaces between provincial government and municipalities/barangays are also presented in the same figure.

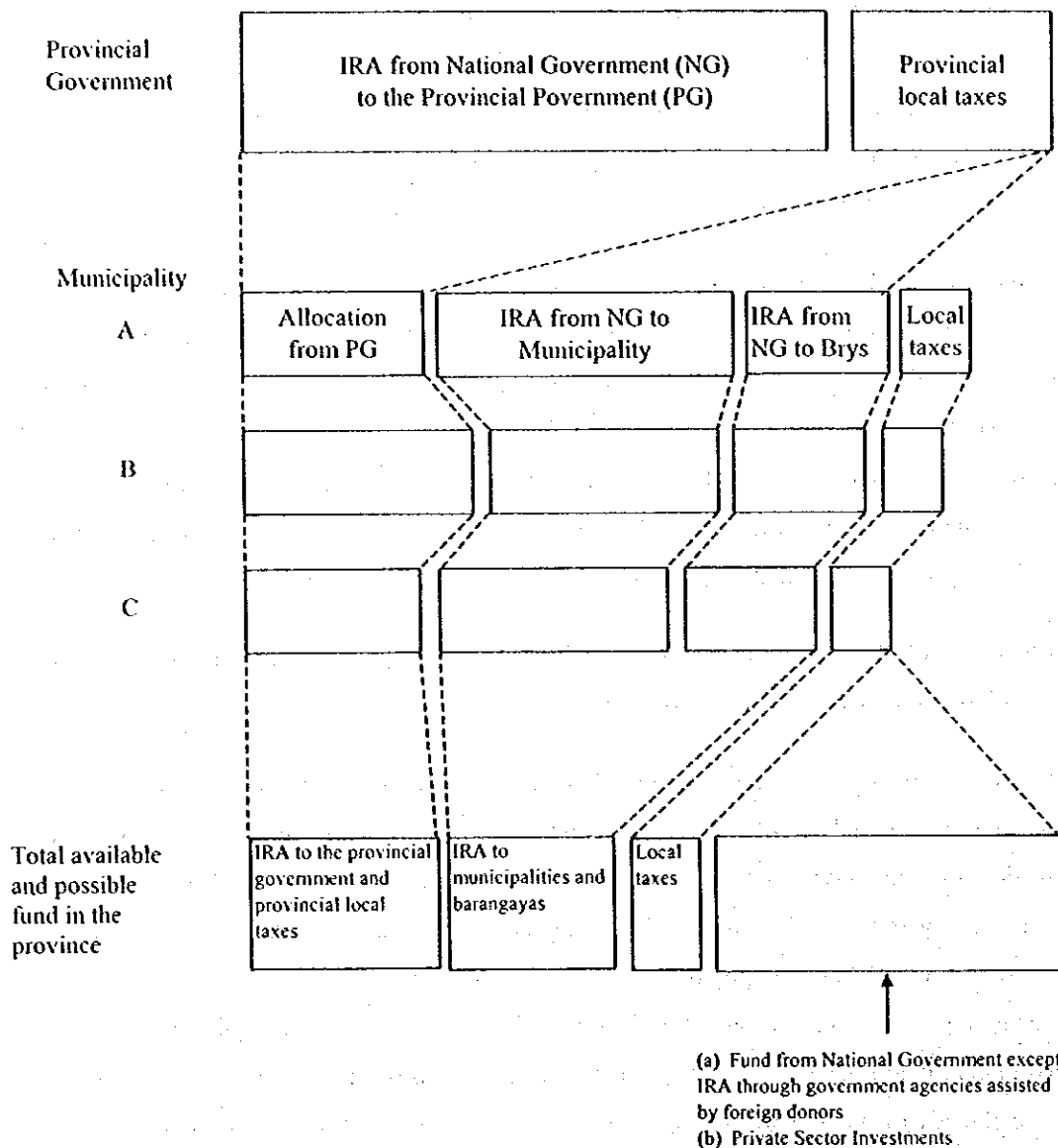
Distribution of IRA to respective municipalities is contemplated in assumption of various factors based on the experiences as of 1998.

The Investment Coordination Committee (ICC) of NEDA adopted a policy "to support the financing of devolved activities with social and/or environmental-objectives" based on three considerations, namely: Equity, Externalities and Economies of Scale. The new cost-sharing arrangement was put into practice in 1998, which clearly limited the national government subsidy for Level I water supply to 5<sup>th</sup> and 6<sup>th</sup> class municipalities up to a maximum of 50% of the total project cost. For sanitation facilities, the national government subsidy for 3<sup>rd</sup> to 6<sup>th</sup> class municipalities shall be from 50% to 70% of the total project cost. In this connection, financial study for Level I water supply and sanitation improvement was additionally conducted for those municipalities meeting the above conditions.

### 11.2 Projection of IRA

The projection of IRA to the relevant sector for Phase I period is made covering different administrative levels. Current manner of allocation by the national government is directed to three different governmental levels; province, municipality and barangay. Municipal fund available for this sector is calculated as a sum of municipal and provincial allotments.

**Figure 11.1.1 Sector Budget Allocation**



Notes: (1) Budget from different sources in the figure above are those shared to water supply and sanitation sector from allotted amount for overall sectors.

(2) Shaded portion above is the potential fund source to be negotiated/arranged to meet target requirements.

**FIGURE 11.1.2**  
**GENERAL FLOW OF FINANCIAL ARRANGEMENTS FOR RELEVANT SECTOR DEVELOPMENT**

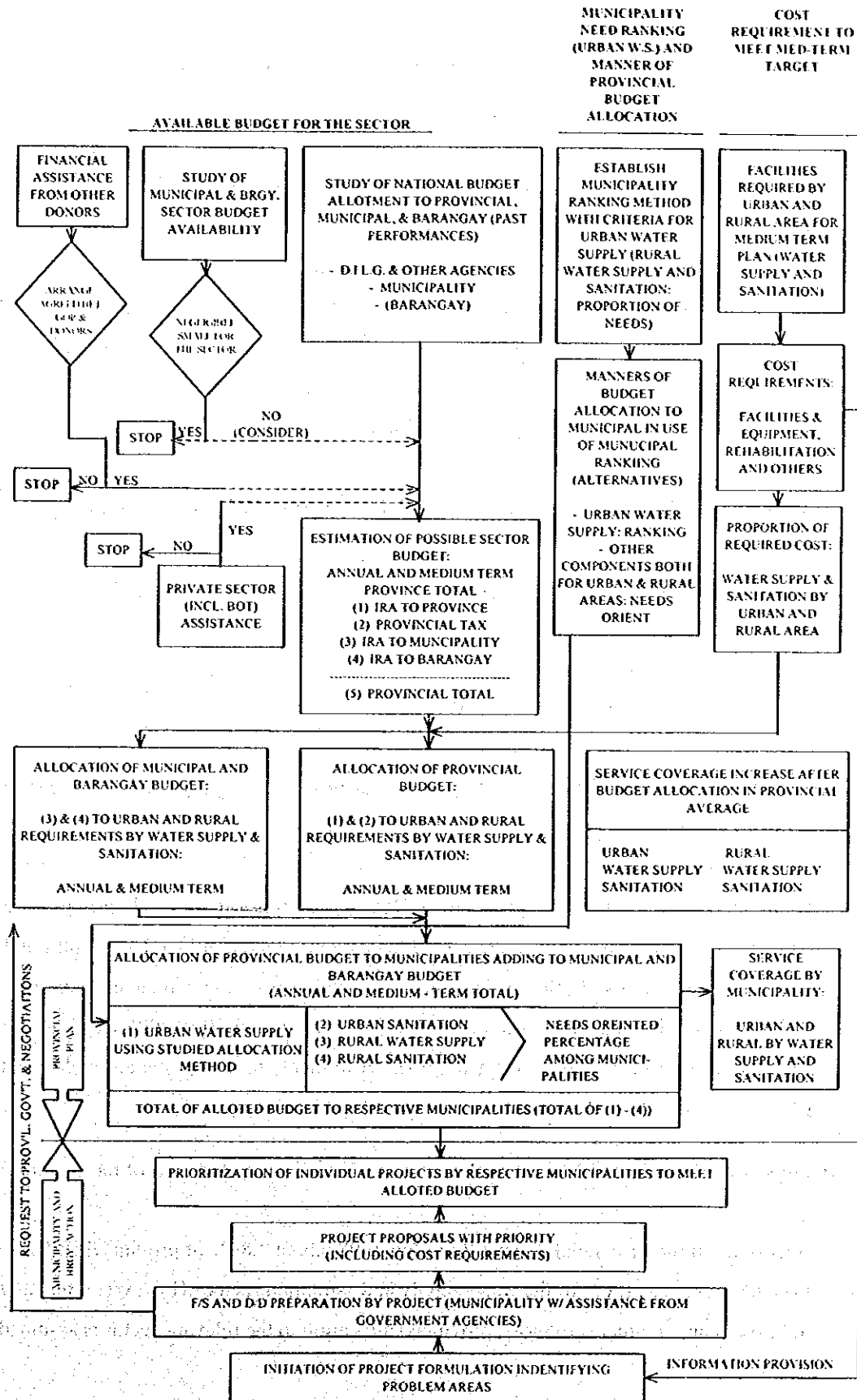


Figure 11.2.1 shows the calculation procedure with assumptions and Tables 11.2.1 and 11.2.2 present the calculation results. Calculation process is further described as follows:

(1) Projection of annual IRA to all LGUs in the Philippines from 2001 to 2005

The IRA projection for the period 2001 to 2002 have been derived as equivalent to 40% of the total revenues of the actual National Internal Revenue Taxes of the 3<sup>rd</sup> Fiscal Year preceding the current year (e.g. 1997 to 1999). This 40% ratio is based on the Local Government Code in 1991. For the years 2003 to 2005, the projected National Internal Revenue Taxes by DOF served as the basis for projecting the IRA. Projected IRA registered an annual average growth rate of 11 percent for the period 2001 to 2005.

(2) Distribution of national total IRA to each administrative unit

Based on the Local Government Code, IRA is distributed by administrative level as follows:

Provinces	23%
Cities	23%
Municipalities	34%
Barangays	20%

(3) Distribution of national total IRA to the subject province by provincial, municipal and barangay level

With reference to allocation of national IRA by administrative level, provinces and municipalities are based on weighted three (3) factors: population, land area and number of administrative units. In this analysis, however, the distribution percentage experienced in 1999 is simply employed in projecting IRA for the period 2001-2005 (refer to Table 6.2.2, Main Report and Supporting Report). Allotments to barangays are added to the IRAs for municipalities (₱80,000 times the number of barangays).

(4) Projection of available IRA to the relevant sector by administrative unit of the province

According to the Provincial Annual Report in 1998, about 2.86% of provincial IRA on the average was availed for the water supply and sanitation sector. However, referring to the experience in other provinces, provincial allocation to the relevant sector is assumed



Figure 11.2.1 TRIAL ALLOCATION OF INTERNAL REVENUE ALLOTMENT (IRA) TO MUNICIPALITIES FOR RELEVANT SECTOR DEVELOPMENT

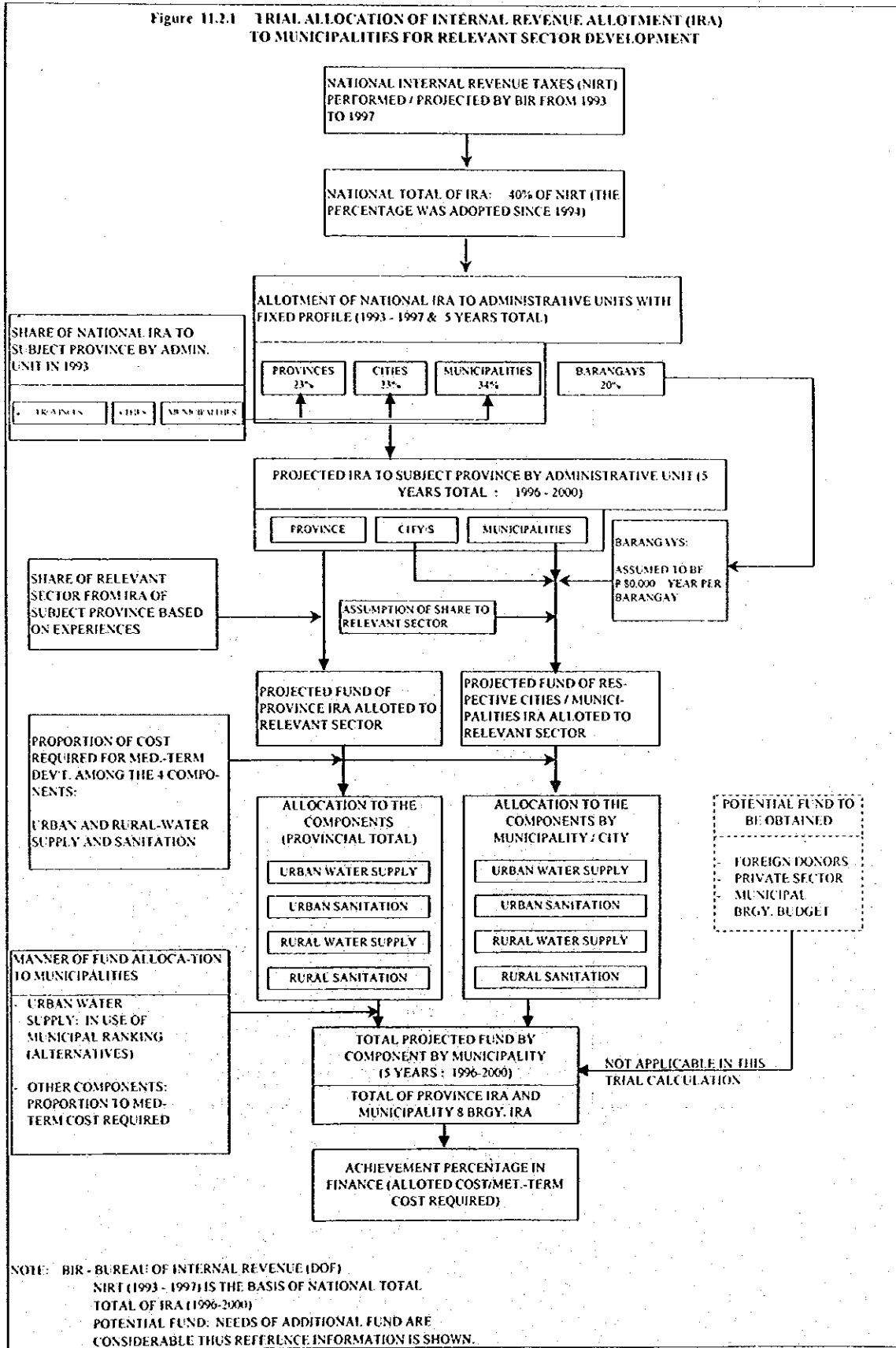


Table 11.2.1 Projected Internal Revenue Allotment for Medium-Term Sector Development

Unit: P 1,000

	2001	2002	2003	2004	2005	Total
1 40% of Actual/Projected National Internal Revenue Taxes of the 3rd Fiscal Year preceding the current year	115,801,280	127,449,920	142,317,600	157,972,536	175,349,515	718,890,851
2 Internal Revenue Allotment to all LGUs						
(a) province (23%)	26,634,294	29,313,482	32,733,048	36,333,683	40,330,388	165,344,896
(b) cities (23%)	26,634,294	29,313,482	32,733,048	36,333,683	40,330,388	165,344,896
(c) municipalities (34%)	39,372,435	43,332,973	48,387,984	53,710,662	59,618,835	244,422,889
(d) barangays (20%)	23,160,256	25,489,984	28,463,520	31,594,507	35,069,903	143,778,170
(e) total IRA to all LGUs	115,801,280	127,449,920	142,317,600	157,972,536	175,349,515	718,890,851
3 Projected IRA to Subject Province by Administrative Unit						
(a) province	743,872	818,699	914,204	1,014,767	1,126,391	4,617,932
(b) municipalities/city including barangays	2,700,348	2,967,152	3,307,685	3,666,251	4,064,258	16,705,693
Bago City	247,794	272,527	304,095	337,334	374,230	1,535,981
Binalbagan	34,756	38,123	42,421	46,947	51,970	214,216
Cadiz City	260,163	286,156	319,333	354,266	393,041	1,612,959
Calatrava	51,423	56,274	62,466	68,985	76,221	315,369
Candoni	19,778	21,695	24,141	26,718	29,577	121,909
Cauayan	55,822	61,236	68,147	75,423	83,499	344,127
Enrique B. Magalona	32,945	36,074	40,067	44,272	48,940	202,298
Escalante	44,661	48,985	54,503	60,314	66,764	275,227
Himanaylan	51,010	55,988	62,342	69,032	76,458	314,830
Hinigaran	40,709	44,611	49,591	54,835	60,656	250,403
Hinoba-an (Asia)	35,255	38,697	43,090	47,716	52,850	217,608
Ilog	33,552	36,806	40,960	45,334	50,188	206,841
Isabela	33,404	36,523	40,504	44,695	49,347	204,473
Kabankalan City	325,067	357,509	398,915	442,514	490,909	2,014,914
La Carlota City	139,346	153,250	170,997	189,683	210,425	863,700
La Castellana	36,452	40,014	44,560	49,347	54,661	225,034
Manapla	28,251	30,996	34,500	38,190	42,285	174,222
Moises Padilla	24,457	26,796	29,782	32,926	36,416	150,377
Murcia	38,621	42,321	47,044	52,016	57,535	237,537
Pontevedra	28,115	30,782	34,186	37,770	41,749	172,601
Pulupandan	19,272	21,050	23,318	25,708	28,359	117,707
Sagay City	231,365	254,445	283,903	314,921	349,351	1,433,985
Salvador Benedicto	18,809	20,644	22,987	25,454	28,193	116,088
San Carlos City	244,014	268,414	299,538	332,351	368,752	1,513,090
San Enrique	16,821	18,432	20,489	22,655	25,059	103,456
Silay City	197,086	216,782	241,922	268,392	297,774	1,221,956
Sipalay	44,659	49,014	54,574	60,427	66,924	275,598
Talisay City	164,249	180,553	201,364	223,276	247,599	1,017,041
Toboso	26,422	29,007	32,307	35,782	39,638	163,156
Valladolid	22,127	24,224	26,901	29,719	32,848	135,820
Victorias City	153,944	169,221	188,718	209,249	232,037	953,169
(c) Provincial Total	3,444,219	3,785,850	4,221,890	4,681,017	5,190,649	21,323,626

**Table 11.2.1 Projected Internal Revenue Allotment for Medium-Term Sector Development (cont'd)**

Unit: P 1,000

	2001	2002	2003	2004	2005	Total
<b>4 Project fund of IRA to Relevant Sector by Administrative Unit</b>						
(a) province	29,755	32,748	36,568	40,591	45,056	184,717
(b) municipalities/city including barangays	97,983	107,656	120,002	133,002	147,431	606,074
Bago City	9,912	10,901	12,164	13,493	14,969	61,439
Binalbagan	1,390	1,525	1,697	1,878	2,079	8,569
Cadiz City	2,865	3,152	3,517	3,902	4,329	17,765
Calatrava	1,960	2,144	2,380	2,629	2,905	12,018
Candoni	791	868	966	1,069	1,183	4,876
Cauayan	2,233	2,449	2,726	3,017	3,340	13,765
Enrique B. Magalona	1,318	1,443	1,603	1,771	1,958	8,092
Escalante	1,786	1,959	2,180	2,413	2,671	11,009
Himamaylan	2,040	2,240	2,494	2,761	3,058	12,593
Hinigaran	1,628	1,784	1,984	2,193	2,426	10,016
Hinoba-an (Asia)	1,410	1,548	1,724	1,909	2,114	8,704
Ilog	1,342	1,472	1,638	1,813	2,008	8,274
Isabela	1,336	1,461	1,620	1,788	1,974	8,179
Kabankalan City	13,003	14,300	15,957	17,701	19,636	80,597
La Carlota City	3,812	4,192	4,678	5,189	5,756	23,626
La Castellana	1,458	1,601	1,782	1,974	2,186	9,001
Manapla	1,130	1,240	1,380	1,528	1,691	6,969
Moises Padilla	978	1,072	1,191	1,317	1,457	6,015
Murcia	1,545	1,693	1,882	2,081	2,301	9,501
Pontevedra	1,125	1,231	1,367	1,511	1,670	6,904
Pulepandan	771	842	933	1,028	1,134	4,708
Sagay City	9,255	10,178	11,356	12,597	13,974	57,359
Salvador Benedicto	361	396	441	488	541	2,226
San Carlos City	9,761	10,737	11,982	13,294	14,750	60,524
San Enrique	673	737	820	906	1,002	4,138
Silay City	7,883	8,671	9,677	10,736	11,911	48,878
Sipalay	1,786	1,961	2,183	2,417	2,677	11,024
Talisay City	6,570	7,222	8,055	8,931	9,904	40,682
Toboso	1,057	1,160	1,292	1,431	1,586	6,526
Valladolid	647	708	786	868	960	3,969
Victorias City	6,158	6,769	7,549	8,370	9,281	38,127
(c) Provincial Total	127,738	140,404	156,570	173,592	192,487	790,792

Table 11.2.2 Projected Allotment of IRA to the Relevant Sector by Component, 2001-2005

Unit: P 1,000

Allocation of IRA to Provincial Units	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation	Total
1. Province	73,511	76,888	14,464	19,854	184,717
2. Municipalities					
Bago City	20,212	29,961	3,032	8,234	61,439
Binalbagan	4,218	2,932	712	708	8,569
Cadiz City			4,646	13,119	17,765
Calatrava			5,029	6,989	12,018
Candoni	1,438	2,488		951	4,876
Cauayan	5,236	5,669	1,035	1,825	13,765
Enrique B. Magalona	4,588	2,485	528	492	8,092
Escalante	4,631	4,313	993	1,073	11,009
Himamaylan			5,086	7,508	12,593
Hinigaran	2,743	6,979	215	79	10,016
Hinoba-an (Asia)	5,140	1,394	1,168	1,003	8,704
Ilog	5,516	1,587	746	424	8,274
Isabela	2,291	5,870		18	8,179
Kabankalan City	23,406	41,720	8,033	7,438	80,597
La Carlota City		16,849	2,711	4,066	23,626
La Castellana	5,663	3,211	4	124	9,001
Manapla	2,064	3,450	506	948	6,969
Moises Padilla		5,936		80	6,015
Murcia	4,371	2,611	806	1,713	9,501
Pontevedra	3,452	2,521	396	535	6,904
Pulupandan	4,708				4,708
Sagay City	18,337	29,613	4,610	4,800	57,359
Salvador Benedicto			525	1,701	2,226
San Carlos City	17,881	34,309	2,433	5,901	60,524
San Enrique	2,273	1,378	200	288	4,138
Silay City	26,597	14,044	3,561	4,676	48,878
Sipalay	5,055	3,984	621	1,364	11,024
Talisay City	21,539	11,021	4,067	4,055	40,682
Toboso	1,247	4,284	232	764	6,526
Valladolid			2,558	1,411	3,969
Victorias City	26,502	5,666	4,284	1,675	38,127
3. Total	292,618	321,161	73,198	103,815	790,792

to be about 4%. This means that approximately 20% of "20% Development Fund" from national IRA are counted on sector projects. The same percentage is applied for the allocation of municipal IRA to the sector.

(5) Available IRA of municipalities by sub-sector

Available municipal fund for the four components (urban and rural water supply, and urban and rural sanitation) is estimated as a sum of respective components in combination of those allocated from the province and distributed in each municipality. Distribution of

sector total fund to sub-components both in the provincial and municipal levels is arranged in proportion to the direct construction cost required for Phase I development.

With regards to the distribution of provincial IRA for urban water supply to respective municipalities, weighing method with ranking is employed, which will be discussed in detail in Section 11.4. For the other components, provincial IRA is distributed to municipalities in proportion to their required costs in Phase I (refer to Table 11.2.2).

The projected provincial IRA to the sector during the period of 2001-2005 is estimated at ₱790.79 million, which is equivalent to 3.71% of combined provincial and municipal IRA. This percentage is computed based on the result of adjustment in use of IRA for those municipalities, required cost of which is lower than the allotted IRA. With regard to the allocation to sub-sectors, rural water supply has the largest allotment of 40.6% (₱321.16 million out of the total ₱790.79 million) followed by urban water supply (37.0% or ₱292.62 million). Rural sanitation is allotted ₱103.82 million (13.13%) and is larger than that for urban sanitation ( ₱73.20 million). The proportion of IRA allotment for the sub-sectors differs by municipality and depends on their priority sub-sectors.

In the allocation of municipal IRA, Kabankalan City has the largest allotment with ₱80.60 million (10.2%) followed by Bago City with ₱61.44 million (7.77%).

### 11.3 Additional Funding Requirements

Annual cost required for the whole province during the medium-term development is summarized in Table 11.3.1 referring to the study results in Chapter 10. The total cost required covers physical contingency; 10% of the direct cost and price contingency; 7% per year covering the direct cost and physical contingency, and value added tax. Details of implementation arrangements for annual investment are shown in Table 11.3.1, Supporting Report. The required cost excluding price contingency was also shown in the Table to compare with available IRA on a current price level.

Table 11.3.2 presents additional funding requirements of the province on the current price level (or shortfall in funding), which are figured out comparing with available fund for the relevant sector (IRA) in the province over the Phase I requirements. Other funds such as those provided by foreign assistance and local tax portions are kept blank to supplement upon confirmation of additional funds available. Out of ₱1,499.69 million required on 1998 price level for Phase I (2001-2005), IRA can fund only ₱790.79 million or 52.7% of the

requirements. Hence, there is a big shortfall of ₱886.52 million in funding in consideration of contingencies, price escalation and value added tax.

Municipal achievement percentages in finance (1998 price level) are shown in Table 11.3.3 in provision of available fund originated by IRA against Phase I financial requirements. The percentages of Cadiz City, Calatrava, Himalayan, La Carlota City, Salvador Benedicto, and Valladolid (100%) are the highest among municipalities. Majority is in the range between 30% and 60% to the respective requirements, while the provincial average is 53% (40.2% in consideration of contingencies and VAT).

#### **11.4 Medium-Term Implementation Arrangements**

The financial requirements to meet Phase I target coverage are substantial. However, projected funding available (IRA) in application of past trend revealed that considerable amount of additional fund must be arranged. Under this situation, reference scenarios are discussed with the assumption of different levels of funding availability with reference to service coverage. Alternative countermeasures are also discussed in view of (1) acquisition of external funds, (2) augmentation of sector finance under current arrangements (IRA and others), (3) introduction of private sector participation to mitigate public investment needs, and (4) effective and economical investments.

##### **11.4.1 Reference Scenarios in Different Funding Levels**

Achievement levels of service coverage in the target year are examined in assumption of five funding levels. It is regarded that the service coverage is increased in proportion to the investment during Phase I period. The relationships between funding levels and corresponding percentages of service coverage are illustrated in Figure 11.4.1 and Figure 11.4.2 for water supply and sanitation sectors, respectively.

**Table 11.3.1 Financing Requirement by Sector Component for the Province**

Unit: P 1,000

Sector Components	2001	2002	2003	2004	2005	Total 2001-2005	Total 2006-2010
<b>Direct Cost</b>							
<i>1. Direct Construction Cost</i>							
<i>Urban Water Supply</i>							
Level III System	0	82,255	123,382	123,382	82,255	411,273	2,082,416
<i>Rural Water Supply</i>							
Level II System	9,594	9,594	0	0	0	19,188	0
Level I Facilities	0	82,195	123,292	123,292	82,195	410,975	892,312
<i>Urban Sanitation</i>							
Household toilet	0	119	178	178	119	593	1,920
Public school toilet	0	11,582	17,372	17,372	11,582	57,908	90,365
Public toilet	0	4,484	6,726	6,726	4,484	22,419	16,995
Disinfection of Level I Deep Well and Shallow	73	133	133	133	133	604	0
<i>Rural Sanitation</i>							
Household toilet	0	1,481	2,221	2,221	1,481	7,404	29,957
Public school toilet	0	20,735	31,102	31,102	20,735	103,674	402,788
Disinfection of Level I Deep Well and Shallow	107	197	197	197	197	893	416
<i>Urban Sewerage</i>	N/A	N/A	N/A	N/A	N/A	N/A	3,307,900
Sub-total	9,774	212,773	304,604	304,604	203,179	1,034,934	6,825,069
<i>2. Procurement of Vehicle/Equipment/Maintenance tools</i>							
Well drilling rig and service truck with crane	0	0	0	0	0	0	26,782
Support vehicle	0	590	0	0	0	590	0
Well rehabilitation equipment	0	280	0	0	0	280	0
Maintenance tools	0	62	93	93	62	310	0
Water quality testing kit	0	3	5	5	3	15	0
Sub-total	0	935	98	98	65	1,195	26,782
<i>3. Water Quality Laboratory</i>	1,434	0	0	0	0	1,434	0
<i>4. Sector Management Cost</i>							
<i>Engineering Studies</i>							
Feasibility study and detail design	55,288	37,001	0	0	0	92,289	313,849
Construction supervision	384	8,434	12,075	12,075	8,050	41,101	139,488
<i>Institutional Development</i>	26,272	25,038	16,747	9,607	8,374	86,038	313,849
Sub-total	81,944	70,473	28,822	21,682	16,424	219,428	767,187
<b>Total Direct Cost</b>	<b>93,151</b>	<b>284,181</b>	<b>333,523</b>	<b>326,384</b>	<b>219,668</b>	<b>1,256,991</b>	<b>7,619,038</b>
<b>Contingencies</b>							
<i>1. Physical Contingency</i>	9,315	28,418	33,352	32,638	21,967	125,691	761,904
<i>2. Price Contingency</i>	14,847	70,348	114,024	144,525	120,994	464,738	N.A
<i>3. Value-Added Tax (VAT)</i>	6,688	25,914	31,678	31,678	21,129	117,087	N.A
<b>Total Investment Cost</b>	<b>124,002</b>	<b>408,862</b>	<b>512,577</b>	<b>535,225</b>	<b>383,758</b>	<b>1,964,507</b>	<b>8,380,941</b>
<b>Total Investment Cost (excluding Price Contingency)</b>	<b>109,154</b>	<b>338,514</b>	<b>398,553</b>	<b>390,700</b>	<b>262,764</b>	<b>1,499,685</b>	<b>8,380,941</b>

Note: Institutional development includes:

1. Capacity enhancement programs,
2. Community management program,
3. Health and hygiene educations,
4. Water quality surveillance, and
5. Administrative support.

**Table 11.3.2 Additional Fund Requirement for the Medium-Term Plan**

Unit: P 1,000

	2001	2002	2003	2004	2005	Total 2001-2005
Financing Requirement	109,154	338,514	398,553	390,700	262,764	1,499,685
Expected available fund						
National						
Local (IRA)	127,738	140,404	156,570	173,592	192,487	790,792
Others						
Total	127,738	140,404	156,570	173,592	192,487	790,792
Shortfall in funding	-18,584	198,110	241,983	217,107	70,277	708,893
(Additional Fund Requirements)	-19,884	226,816	296,440	284,583	98,567	886,522

Note: Shortfall in funding:

above - current year price level.

below - current year price escalated at 7% per year.

Three reference scenarios are discussed with respect to different levels of funding. These scenarios will be referred to in combination with alternative countermeasures discussed in Section 11.4.2. Using computer-based programs, these scenarios may be modified by policy makers according to updated information and policy on the available fund and sector targets.

**(1) The First Reference Scenario**

No funding constraints are considered in this scenario to realize Phase I development as planned. This scenario is too optimistic based on the past experience of the province.

**(2) The Second Reference Scenario**

An intermediate scenario with 50-75 % funding ranges are considered. Urban and rural water supply coverage in the year 2005 is attained between 79-82% and between 72-75%, respectively. For urban and rural sanitation (household toilets), coverage will reach 77-78% and 73-77%, respectively based on the assumption that required private investments are followed.

**(3) The Third Reference Scenario**

In the scenario of 25% funding against the total requirements of Phase I, urban and rural water supply coverage in the year 2005 will be attained at 76% and 69%, respectively, while urban and rural sanitation coverage will be at 75% and 70%. All sub-sectors will not be able to keep current service levels.

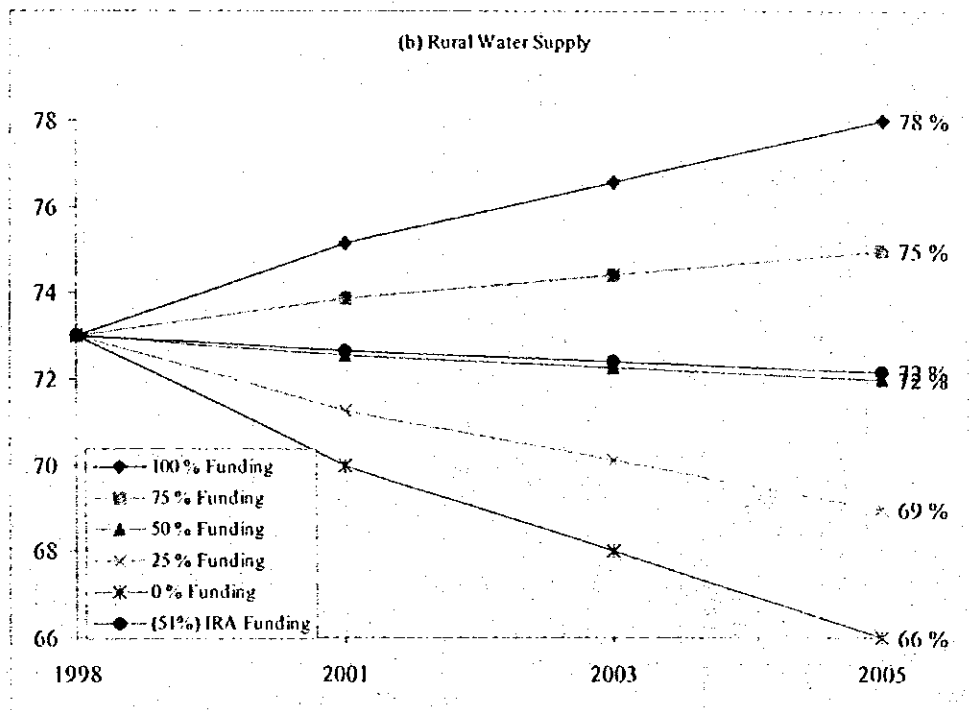
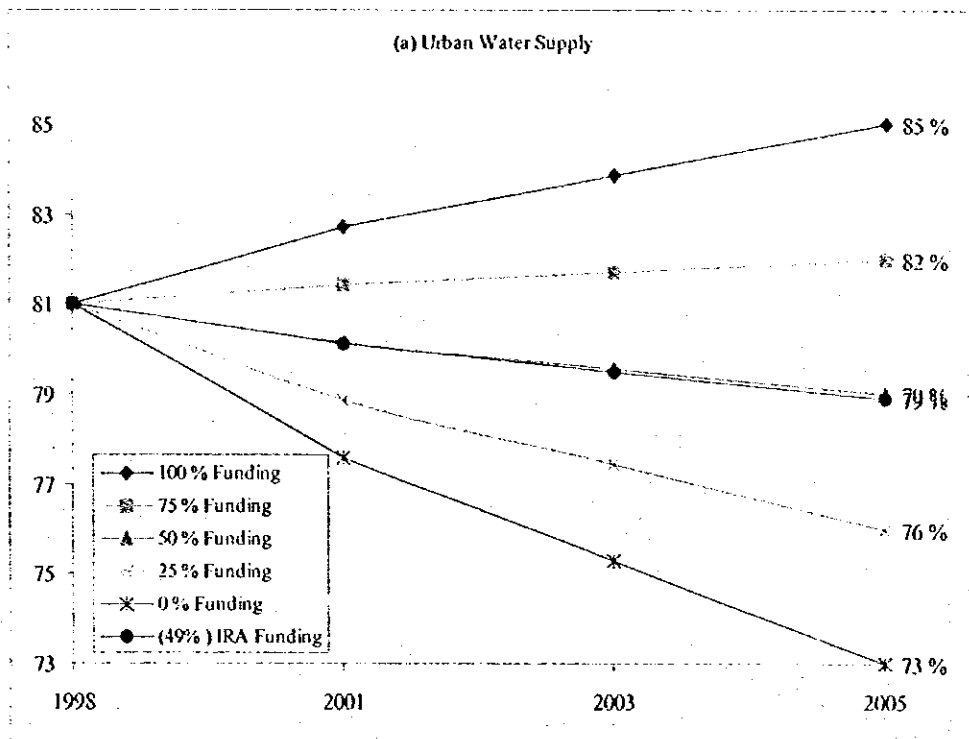


Table 11.3.3 Internal Revenue Allotment for Water Supply and Sanitation Sector by Municipality  
(Medium-term Development, 2001-2005)

Unit: P. 1,000

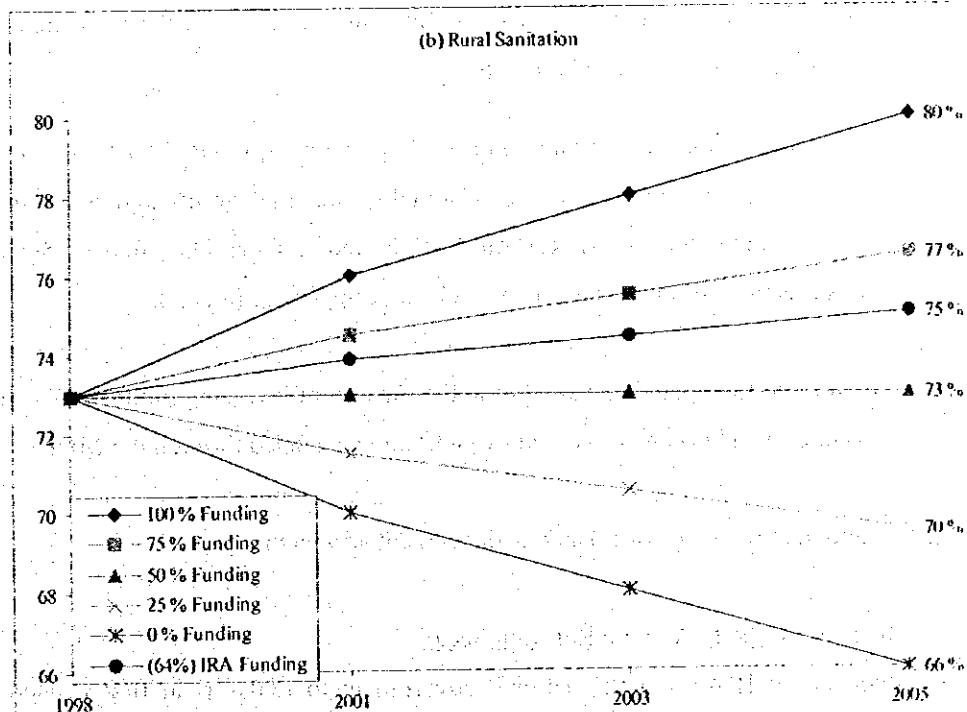
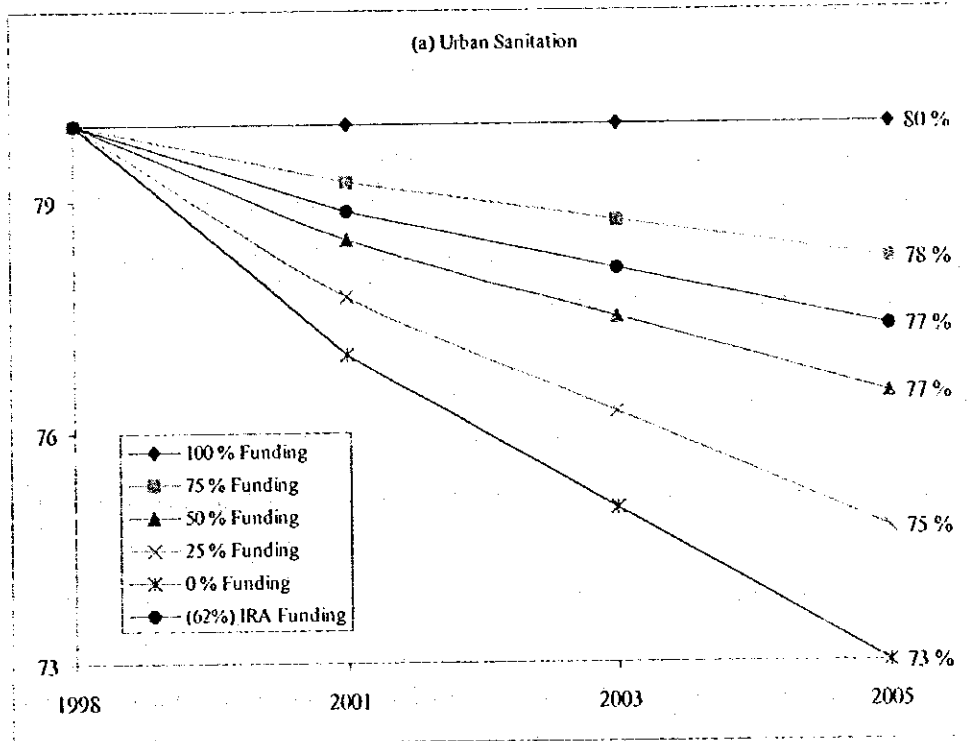
Name of Municipality/City	IRA Allocation to Municipalities												Phase I Investment Cost Requirement (b)	Achievement Percentage (%) in Finance (a)/(b)				
	Urban Water Supply				Rural Water Supply				Urban Sanitation						Rural Sanitation			
	Urban Water Supply		Rural Water Supply		Urban Sanitation		Rural Sanitation		Urban Sanitation		Rural Sanitation				Available Fund of Municipality (a)			
	Allotted from Provincial Government	Municipality Fund	Total	Allotted from Provincial Government	Municipality Fund	Total	Allotted from Provincial Government	Municipality Fund	Total	Allotted from Provincial Government	Municipality Fund	Total			Allotted from Provincial Government	Municipality Fund	Total	
Bagu City	2,100	20,212	22,313	6,313	29,961	36,273	747	3,032	3,779	1,890	8,224	10,124	72,490	103,660	70			
Binalbagan	2,100	4,218	6,318	2,343	2,932	5,275	665	712	1,377	723	708	1,431	14,400	53,542	27			
Cadiz City								4,646	4,646			13,119	17,765	17,765	100			
Calatrava								5,029	5,029			6,989	12,018	12,018	100			
Candoni	1,656	1,438	3,094	746	2,488	3,233				431	951	1,381	7,709	10,490	73			
Caulayan	4,717	5,236	9,953	3,204	5,669	8,873	687	1,035	1,722	1,182	1,825	3,007	23,555	61,467	38			
Enrique B. Magalona	2,100	4,588	6,688	1,850	2,485	4,335	492	528	1,020	528	492	1,019	13,062	46,637	28			
Escalante	2,100	4,631	6,731	3,730	4,313	8,043	956	993	1,949	1,085	1,073	2,158	18,881	75,515	25			
Himamaylan							75	5,086	5,160			7,508	12,668	12,668	100			
Hinigaran	4,717	2,743	7,460	4,334	6,979	11,313	248	215	464	227	79	306	19,542	49,488	39			
Hinoba-an (Asia)	4,717	5,140	9,857	667	1,394	2,060	603	1,168	1,771	596	1,003	1,599	15,287	29,414	52			
Ilog	4,717	5,516	10,233	1,024	1,587	2,611	557	746	1,303	429	424	853	15,001	39,659	38			
Isabela	4,717	2,291	7,008	4,041	5,870	9,911				191	18	208	17,128	44,733	38			
Kabankalan City	4,717	23,406	28,123	9,457	41,720	51,177	1,921	8,033	9,954	1,849	7,438	9,287	98,541	146,971	67			
La Carlota City								2,711	2,711			4,066	23,626	23,626	100			
La Castellana	4,717	5,663	10,380	1,778	16,849	16,849	119	4	123	244	124	368	15,859	38,496	41			
Manapla	2,100	2,064	4,164	2,301	3,450	5,752	442	506	948	787	948	1,736	12,000	36,316	35			
Moises Padilla				1,796	5,936	7,732				202	80	281	8,013	14,069	57			
Murcia	4,717	4,371	9,088	1,533	2,611	4,144	564	806	1,369	1,128	1,713	2,841	17,443	42,730	41			
Pontevedra	2,100	3,452	5,552	1,944	2,521	4,465	409	396	806			535	11,931	41,306	29			
Pulupandan	2,100	4,708	6,809										6,809	17,829	38			
Sagay City	2,100	18,337	20,437	9,070	29,613	38,683	1,516	4,610	6,126	1,635	4,800	6,435	71,680	141,275	51			
Salvador Benedicto								525	525			1,701	2,226	2,226	100			
San Carlos City	2,100	17,881	19,981	7,472	34,309	41,781	641	2,433	3,074	1,449	5,901	7,351	72,186	105,782	68			
San Enrique	2,100	2,273	4,373	949	1,378	2,328	242	200	442	359	288	646	7,789	21,037	37			
Silay City	2,100	26,597	28,697	3,230	14,044	17,274	914	3,561	4,475	1,226	4,676	5,902	56,348	88,826	63			
Sinalay	2,100	5,055	7,156	2,229	3,984	6,213	451	621	1,072	913	1,364	2,277	16,717	48,145	35			
Talisay City	2,100	21,539	23,639	1,834	11,021	12,855	762	4,067	4,829	822	4,055	4,877	46,200	52,376	88			
Toboso	4,717	1,247	5,963	3,597	4,284	7,880	3071	232	539	305	764	1,569	15,952	43,418	37			
Valladolid								2,558	2,558			1,411	3,969	3,969	100			
Victorias City	2,100	26,502	28,602	1,445	5,666	7,112	1,145	4,284	5,429	580	1,675	2,255	43,397	74,232	58			
<b>Total</b>	73,511	219,106	292,618	76,888	244,273	321,161	14,404	58,734	73,138	19,354	83,961	103,315	790,792	1,499,685	53			

Figure 11.4.1 Relation Between Funding Levels and Percent of Coverage for Water Supply Sector



Note: Percentages of the coverage between 1998 and 2005 are simply prorated as the reference

Figure 11.4.2 Relation Between Funding Levels and Percent of Coverage for Sanitation Sector



Note: Percentages of the coverage between 1998 and 2005 are simply prorated as the reference

The allocated IRA funding of urban and rural water supply in the year 2005 will be 49% and 51% which will cover 79% and 72% of the population. In order to attain the Phase I development target of 85% and 78% service coverage, it needs an additional IRA funding of 51% and 49%, respectively.

For both urban and rural sanitation, 100% funding shall have coverage percentage of 80%. However, at IRA funding of 62% and 64%, service coverage will only be at 77% and 75%. Thus, to meet the Phase I development targets of 80% of the population, an additional IRA funding of 38% and 36% is required.

#### 11.4.2 Alternative Countermeasures

This sub-section presents the means of financing the shortfall for the investment program.

##### (1) Acquisition of external funds

Foreign assistance has played a significant role in the development of the relevant sector in the past. Negotiations with the central government agencies (DILG, LWUA, etc.) are requisites to access the foreign funds. Development of new local financial mechanism is also needed for LGUs under current policy shifts to increase the opportunities of LGUs undertaking foreign-assisted projects.

As a matter of fact, Local Government Empowerment Fund (LGEF) was established in 1996 to provide a mechanism for channeling external grants and loans to 19 priority provinces under the Social Reform Agenda and/or those classified as 5th or 6th class LGUs (details are referred to Chapter 11.4.2, Supporting Report).

The foreign loan may be availed of at the maximum financing limit of 75% of the overall project cost. This can be secured by GOP and channeled through the MDF.

##### (2) Augmentation of sector finance under current arrangements

###### Increase of the IRA to the Relevant Sector

Increase of IRA from the national government to LGUs is at first needed along with current procedure. LGUs shall also arrange the funds with a priority to the relevant sector.

### Local Taxes

More allocation of local taxes to the relevant sector shall be arranged although the share of local taxes in the provincial total budget is small.

### Utilization of Other Local Funds

Utilization of other funds, Countryside Development Fund (CDF) in particular, shall be sought for development of the relevant sector.

## (3) Introduction of private sector

### Privatization of Level III Waterworks System

Privatization of Level III systems helps expedite sector development and sustainability of the system as suggested by NEDA Board Resolution No. 4 (series 1994).

### LGU Guarantee Organization

LGU Guarantee Organization as a public-private corporation managed by private sector in the national level shall be studied to encourage private financing for the development of environmental infrastructure, which is introduced in other developing countries. The organization will guarantee local private loans to LGUs in provision of a longer term financing.

## (4) Effective and economical investment

### Investment Need Ranking of Municipalities

Investment need ranking of the municipalities is discussed as a guide for implementation of PW4SP and a measure for effective and economical public investment. Referring to this ranking, the provincial government will arrange its financial resources more effectively.

The ranking for urban water supply is specifically studied considering three factors, while a sole factor of additional requirements is assumed to coincide with the priority of other sub-sectors. Synthetic evaluation of concerned sub-sectors is finally presented in the context of comprehensive improvement of this sector. The result for urban water supply is employed for allocation of provincial IRA to the municipalities in the concerned sub-sector. The synthetic ranking may be availed for the huge investment in use of the funds to be provided by other donors in the future.

For the urban water supply component, the ranking criteria comprise three essential evaluation factors, namely: (a) percentage of underserved and unserved population in the base year; (b) percentage of underserved and unserved population in Phase I; and (c) percentage of population unserved by Level III Systems in the base year. First, these factors are scored by the range of underserved and unserved percentage and totaled by municipality with the application of weighing method. Adopted weight to the factors (a), (b) and (c) are 50%, 35% and 15%, respectively. Table 11.4.1 shows ranking procedures, overall weighted score and investment need ranking of the municipalities. The top two (2) priority municipalities are Cauayan and Toboso.

With reference to the provincial fund allocation, it is assumed that 60% of the fund for urban water supply from provincial government is distributed to the top five ranking municipalities, while the remaining 40% are equally distributed to the rest of the municipalities. The result of distribution is shown in Table 11.4.2. The available funds for about half of the municipalities are adequate to meet the Phase I requirements for urban water supply.

To come up with synthetic ranking of the municipalities, scoring method is also employed for other sub-sectors. The score is derived from the range of underserved and unserved percentage in the base year. Synthetic investment need ranking of municipalities covering the four sub-sectors is shown in Table 11.4.3 (refer to ranking procedures in Table 11.4.1, Supporting Report). The top ranking municipalities are Isabela, La Castellana, and Enrique B. Magalona. La Carlota City is the least priority in terms of investment ranking.

#### **11.5 National Government Assisted Level I Water Supply and Sanitation Project**

Of the overall project requirements for the medium-term development, those for Level I water supply and sanitation improvement with possible assistance from the GOP were studied in application of new cost-sharing arrangement. In 1997, the six provinces in the Luzon area (after completion of PW4SP) jointly submitted the project proposal, as a package of 23rd OECF assisted loan, to the NEDA through the DILG for the limited sub-sectors under the above conditions. The loan agreement between the two parties was made on September, 1999.

In the same context as proposed by the six provinces, project components with scope of work and financial viability were studied. The project is a part of medium-term development plan

Table 11.4.1 Municipal Investment Need Ranking for Urban Water Supply

Name of Municipality/City	Evaluation Factor			Scoring by the Factor			Overall Weighted Score	Investment Need Ranking
	% of Underserved and Unserviced Population in Base Year	% of Underserved and Unserviced Population in Phase I	% of Population Unserviced by Level III Systems in Base Year	Underserved and Unserviced Population in Base Year	Underserved and Unserviced Population in Phase I	Population Unserviced by Level III Systems in Base Year		
Basco City	28	35	82	0.60	0.60	1.00	0.66	13
Binalbagan	15	21	69	0.40	0.40	0.40	0.46	20
Cadiz City	2	9	7	0.20	0.20	0.20	0.20	30
Calaraya	10	12	15	1.00	0.20	0.20	0.60	17
Candani	40	42	100	0.80	0.80	1.00	0.76	5
Catubuyan	44	47	100	1.00	0.80	1.00	0.93	1
Enrique B. Magalona	22	33	88	0.60	0.60	1.00	0.66	13
Escalante	8	19	85	0.20	0.40	1.00	0.39	25
Himamaylan	11	15	84	0.40	1.00	1.00	0.70	11
Hinigaran	41	45	93	1.00	0.60	1.00	0.86	3
Hinobasan (Asua)	32	32	100	0.80	0.80	1.00	0.76	5
Ilog	32	32	98	0.80	0.60	1.00	0.76	5
Isabela	37	41	100	0.80	0.80	1.00	0.76	5
Kabankalan City	35	43	100	0.80	0.60	1.00	0.76	5
La Carlota City	5	5	27	0.20	0.20	0.40	0.23	29
La Castellana	34	42	86	0.80	0.60	1.00	0.76	5
Manapla	8	20	55	0.20	0.40	0.60	0.33	27
Moises Padilla	12	15	77	0.40	1.00	1.00	0.67	12
Murcia	10	21	61	1.00	0.40	1.00	0.79	4
Pontevedra	12	19	60	0.40	0.40	0.60	0.43	23
Pulupandan	18	27	92	0.40	0.40	1.00	0.49	18
Sagay City	22	35	74	0.60	0.60	0.80	0.63	16
Salvador Benedicto	12	21	53	0.20	0.20	0.20	0.20	30
San Carlos City	26	33	100	0.40	0.40	0.60	0.43	23
San Enrique	15	24	75	0.40	0.40	0.80	0.46	20
Silay City	18	22	93	0.40	0.40	1.00	0.49	18
Sipalay	7	17	75	0.20	0.40	0.80	0.36	26
Talisay City	52	59	87	1.00	1.00	1.00	0.93	1
Toboso	7	14	92	0.20	0.20	1.00	0.32	28
Valladolid	15	28	76	0.40	0.40	0.80	0.46	20
Victorias City	15	28	76	0.40	0.40	0.80	0.46	20
Provincial Total	19	27	76					

Note: 1. Scoring to Underserved and Unserviced Percentage. 2. Weight Allocation to Score.

Score	Range of Underserved and Unserviced Percentage			50	35	15	Allocated Weight
1.0	41	61	81				
0.8	31	50	60				
0.6	21	31	45				
0.4	11	16	21				
0.2	1	10	15				

for Level I water supply and sanitation for limited classes of the municipality. The DILG is assumed to be Executing Agency and the province Implementing Agency in the meantime. The project may be merged together with those of the 3rd batch provinces in preparation of the PW4SP. The implementation of a packaged project may be realized in the near future.

### 11.5.1 Project Components

#### (1) Water Supply and sanitation Component

There are two (2) eligible municipalities; Candori and San Enrique in terms of 5<sup>th</sup> and 6<sup>th</sup> municipalities for GOP-assisted Level I rural water supply in the province. The Level I facilities for the municipalities consist of 16 deep wells, 26 shallow wells and 9 spring development. While, there are twenty (20) municipalities/cities to meet the condition for GOP-assisted projects (limited to 3rd to 6<sup>th</sup> municipalities) in sanitation sub-sector. The sanitation component comprises 38 public toilets and 363 school toilets to the rural communities. Distribution of toilet bowl (pour flush only) is one of the components of sanitation sub-sector in medium-term development plan, however, it shall be excluded from GOP-assisted projects due to the current practice of NEDA.

With the integration of sanitation in the water supply projects, equal emphasis shall be given to sanitation component to ensure a greater health impact in the rural communities. School toilet will be constructed for public school in the rural areas (50%: toilet facility/classroom and 50%: standard toilet building), while public toilets will be constructed at public markets and bus terminals in urban areas. Health consciousness among the rural people will also be bolstered with the provision of health education training and IEC materials.

#### (2) Equipment/Commodity Assistance

Due to budgetary constraint and cost-sharing arrangement required (heavy burden to the LGUs), the provision of drilling machine and its service truck is excluded in the medium-term plan (to be considered for long-term plan). While each one unit of service vehicle and well rehabilitation equipment is considered. In addition, maintenance tool and water quality testing kits are to be procured and one unit will be provided to each municipality to maintain the facilities.



Table 11.4.2 Distribution of Provincial IRA to Municipalities for Urban Water Supply

Unit: P 1,000

Ranking	Name of Municipality/City	Fund Distribution		IRA to Municipalities from National Government (2)	Available Fund Distributed to Municipalities (1) + (2)	Phase I Requirements	Accomplishment Percentage (%)
		Fund Distribution from Provincial Government (1)	Distribution Percentage (%)				
13	Bago City	2,100	2.86	20,212	22,313	34,102	65.43
20	Binalbagan	2,100	2.86	4,218	6,318	26,354	23.97
30	Cadiz City						
17	Calatrava						
5	Candoni	1,656	2.25	1,438	3,094	3,094	100
1	Cauayan	4,717	6.42	5,236	9,953	23,381	42.57
13	Enrique B. Magalona	2,100	2.86	4,588	6,688	26,440	25.29
25	Escalante	2,100	2.86	4,631	6,731	31,763	21.19
11	Himamaylan						
3	Hinigaran	4,717	6.42	2,743	7,460	13,552	55.05
5	Hinoba-an (Asia)	4,717	6.42	5,140	9,857	17,370	56.75
5	Ilog	4,717	6.42	5,516	10,233	26,443	38.70
5	Isabela	4,717	6.42	2,291	7,008	12,530	55.93
5	Kabankalan City	4,717	6.42	23,406	28,123	42,682	65.89
29	La Carlota City						
5	La Castellana	4,717	6.42	5,663	10,380	24,219	42.86
27	Manapla	2,100	2.86	2,064	4,164	10,756	38.72
12	Moises Padilla						
4	Murcia	4,717	6.42	4,371	9,088	19,657	46.23
23	Pontevedra	2,100	2.86	3,452	5,552	20,653	26.88
18	Pulupandan	2,100	2.86	4,708	6,809	17,829	38.19
16	Sagay City	2,100	2.86	18,337	20,437	45,163	45.25
30	Salvador Benedicto						
23	San Carlos City	2,100	2.86	17,881	19,981	31,252	63.94
13	San Enrique	2,100	2.86	2,273	4,373	11,553	37.85
20	Silay City	2,100	2.86	26,597	28,697	48,334	59.37
18	Sipalay	2,100	2.86	5,055	7,156	22,078	32.41
26	Talisay City	2,100	2.86	21,539	23,639	27,730	85.25
1	Toboso	4,717	6.42	1,247	5,963	8,294	71.90
28	Valladolid						
20	Victorias City	2,100	2.86	26,502	28,602	51,598	55.43
<b>Total</b>		<b>73,511</b>	<b>100</b>	<b>219,106</b>	<b>292,618</b>	<b>596,827</b>	<b>49.03</b>

Table 11.4.3 Municipal Investment Need Ranking

Name of Municipality/City	Weighted Score by Sub-sector					Synthetic Municipal Investment Need Ranking
	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation	Total Weighted Score	
Bago City	0.17	0.05	0.05	0.05	0.32	28
Binalbagan	0.12	0.10	0.15	0.10	0.47	12
Cadiz City	0.05	0.05	0.15	0.15	0.40	18
Calatrava	0.15	0.05	0.15	0.05	0.40	19
Candoni	0.19	0.10	0.10	0.05	0.44	13
Cauayan	0.23	0.10	0.10	0.05	0.48	7
Enrique B. Magalona	0.17	0.10	0.20	0.10	0.57	3
Escalante	0.10	0.05	0.10	0.05	0.30	30
Himamaylan	0.18	0.05	0.15	0.10	0.48	9
Hinigaran	0.22	0.05	0.15	0.05	0.47	10
Hinoba-an (Asia)	0.19	0.05	0.10	0.05	0.39	22
Ilog	0.19	0.20	0.10	0.05	0.54	5
Isabela	0.19	0.10	0.25	0.05	0.59	1
Kabankalan City	0.19	0.15	0.05	0.05	0.44	14
La Carlota City	0.06	0.05	0.05	0.05	0.21	31
La Castellana	0.19	0.15	0.15	0.10	0.59	2
Manapla	0.08	0.05	0.20	0.10	0.43	15
Moises Padilla	0.17	0.05	0.20	0.10	0.52	6
Murcia	0.20	0.05	0.20	0.10	0.55	4
Pontevedra	0.11	0.05	0.15	0.05	0.36	27
Pulupandan	0.12	0.05	0.10	0.05	0.32	28
Sagay City	0.16	0.10	0.10	0.05	0.41	17
Salvador Benedicto	0.05	0.05	0.25	0.05	0.40	19
San Carlos City	0.11	0.10	0.10	0.05	0.36	26
San Enrique	0.17	0.05	0.15	0.05	0.42	16
Silay City	0.12	0.05	0.10	0.20	0.47	10
Sipalay	0.12	0.05	0.10	0.10	0.37	24
Talisay City	0.09	0.05	0.15	0.10	0.39	21
Tohoso	0.23	0.05	0.15	0.05	0.48	7
Valladolid	0.08	0.05	0.15	0.1	0.38	23
Victorias City	0.12	0.05	0.15	0.05	0.37	25

### (3) Consultancy Services

Considering the magnitude and complexity of the project, consulting services and technical assistance may be availed to strengthen the executing and implementing agencies' capabilities in undertaking the project. The services will cover technical and institutional/community development aspects of the project.

During the detailed design stage, the services will cover hydrogeological survey, finalization of well/spring construction sites based on site selection criteria to be developed, and preparation of bidding documents. Guidelines and training program for strengthening the capability of implementing agencies and NGOs will be prepared and carried out. The construction stage will include assistance to LGUs in the supervision of construction works, community organizing and training works.

#### **(4) Institutional Development**

The project entails community development with people's active participation to assure the responsibility for O&M of the facilities and strengthening of existing institution/organization and/or formation of new ones. Thus, various activities will be undertaken from national to beneficiary levels. A sufficient cost for the purpose will be taken into account.

#### **11.5.2 Project Requirements**

The province will manifest its willingness to participate in the project entailing timely arrangements to meet NEDA requirements. These requirements are (1) RDC Endorsement, (2) ECC clearance and (3) Letter of Commitment. Water right permit from the National Water Resources Board will be fulfilled after site selection and preparatory works have been undertaken. In addition, Memorandum of Agreement (MOA) on the cost-sharing and other arrangements required for the project will be exchanged between the province and concerned municipalities.

#### **11.5.3 Funding Requirements**

##### **(1) New cost-Sharing Policy**

The project finance was studied in accordance with the 50%-50% cost sharing arrangement (50% is an average municipality's share among concerned municipalities) between the GOP and the LGUs. Financial sharing among the province, municipality and barangay shall then be clarified based on the estimated cost requirements through MOA.

The new policy of the national government grants for devolved activities stated that "this scheme shall be applied to all new ODA-assisted projects that are currently being packaged in support of LGUs". With regard to this, 50% national government share will

be applied for Level I water supply and even 70% of NG share for 5<sup>th</sup> and 6<sup>th</sup> classes of municipalities for sanitation component (refer to Table 11.5.1).

**Table 11.5.1 New Cost-Sharing Arrangement between NG and LGUs**

Sector/Activity	LGU	Income	Devised	NG	Remarks
Water Supply: Level I only	1 <sup>st</sup> to 4 <sup>th</sup>		0		No GOP grants for Level II & III
	5 <sup>th</sup> to 6 <sup>th</sup>		50		
Sanitary Support Faci. for Public Markets and Slaughterhouses	1 <sup>st</sup> to 2 <sup>nd</sup>		0		
	3 <sup>rd</sup> and 4 <sup>th</sup>		50		
	5 <sup>th</sup> and 6 <sup>th</sup>		70		

## (2) Financial Viability

### 1) Conditions and Assumptions for Financial Study

- The cost-sharing between the GOP and LGUs is 50% : 50% of the overall project cost. While, it is assumed that the 50% share of LGU is further allocated to the LGUs and beneficiaries with 47% and 3% to the overall cost, respectively.
- The financial sources of the national government are the loan from foreign donor and GOP counterpart budget, and LGUs from the budget of the province and municipalities. The cost-sharing part by beneficiaries is equity contribution including land, material purchase cost, right of way, labor, etc.
- The O&M cost is managed by the beneficiaries.

### 2) Project Cost

The cost estimate was made based on 1998 price level in Chapter 10. Then, physical and price contingencies as well as value-added tax were added. The project cost for the concerned municipalities in line with above conditions/assumptions is shown in Table 11.5.2. Overall aggregate cost for the implementation period of 2001 - 2005 arrived at about ₱191.1 million (₱138.1 million in 1998 price level) referring to the implementation schedule of the project.

### 3) Financial Arrangement

The two alternatives for the financial arrangements are studied to prepare required cost to be shared among concerned parties: i) Utilization of IRA only and ii) Utilization of IRA and MDF.

Table 11.5.2 GOP-Assisted Level I Water Supply and Sanitation Project Cost

(Unit: Peso)

Category	Qty.	Unit Cost	Amount	GOP		LGU
				Foreign Loan	GOP/CP	
<b>A. Const. &amp; Civil Works</b>						
Water Supply						
1. Deep Well (40m)	11	364,000	4,004,000			
2. Deep Well (80m)	4	540,000	2,160,000			
3. Deep Well (120m)	0	707,000	0			
4. Shallow Well	9	84,300	758,700			
5. Spring Development	2	737,600	1,475,200			
Sub-total a			8,397,900	3,478,782		4,919,118
Sanitation						
1. School Toilets	363	233,500	84,760,500			
2. Public Toilets	38	361,600	13,740,800			
Sub-total b			98,501,300	40,803,602		57,697,698
Land acquisition						
Land acquisition & Right of Way			140,000			140,000
Sub-total A			107,039,200	44,282,384		62,756,816
<b>B. Equip./Logistic Support</b>						
1. Support Vehicle	1	590,000	590,000	590,000		
2. Well Rehab. Eq.	1	280,000	280,000	280,000		
3. Maintenance Tools	2	10,000	20,000	20,000		
4. Water Quality Test Kits	2	15,300	30,600	30,600		
Sub-total B			920,600	920,600		
<b>C. Consultancy Services</b>						
1. Hydrogeological Survey			1,148,000	1,148,000		
2. D/D and Const. Sv.			11,774,312	11,774,312		
Sub-total C			12,922,312	12,922,312		
<b>D. Institutional Devt.</b>						
1. Capacity Enhanc. Prog.	L.S.		3,200,000	2,650,000	550,000	
2. Commu. Manag. Prog.	16	10,770	172,320	57,900	114,420	
3. Health & Hygiene Educ.	16	1,800	28,800		28,800	
4. Water Quality Surveil.	16	700	11,200		11,200	
5. NGO Assistance	16	1,200	19,200		19,200	
6. Administrative Support	L.S.		1,200,000		1,200,000	
Sub-total D			4,631,520	2,707,900	1,923,620	
<b>E. Physical Contingency</b>						
			12,551,363	6,083,320	192,362	6,275,682
<b>Total (A+B+C+D+E)</b>			<b>138,064,995</b>	<b>66,916,515</b>	<b>2,115,983</b>	<b>69,032,498</b>
GOP Total					69,032,498	
LGUs						64,890,548
Equity						4,141,950
LGUs + Equity						69,032,498
<b>F. Others</b>						
1. Price Contingency			47,209,034	26,930,109	774,357	19,504,568
2. Value Added Tax (VAT)			5,812,530		5,812,530	
Sub-total F			53,021,564	26,930,109	6,586,886	19,504,568
<b>Grand Total</b>			<b>191,086,559</b>	<b>93,846,624</b>	<b>8,702,869</b>	<b>88,537,066</b>

Note: (1) Equity of users includes land cost, right of way, labor, etc., equivalent to 3% of direct cost (excluding item F).

(2) N.A.: Not applicable

(3) Assumption/Conditions for Cost estimate

1) Direct cost: based on 1998 price level

2) Physical contingency: 10% of materials procured

3) Price contingency: Forex 3%; local 7%; compounded annually, base year 1998

4) Value added tax; 10% materials produced

Case 1: Utilization of IRA fund only

Currently, there is no projection on drastic increase of LGUs' budget through the future. Under such a condition, the following are considered.

- Potential fund is the IRA annually allotted from the GOP to municipalities and from province to municipalities. Municipal tax is negligible small in the allocation to the sector. The total municipal budget available was projected by sub-sector in Section 11.3.
- Arrangements by the municipalities with MDF and banks are disregarded considering current financial capability of the municipalities.
- 5-year development program (from 2001 to 2005) is applied to increase project fund using available IRA

Applying the cost-sharing arrangement, the IRA available was estimated for the eligible municipalities in provision of national government grant fund based on the following conditions.

- a) The available fund of sub-sectors is a sum of municipal and provincial allotments of IRA
- b) For water supply sub-sector, IRA to municipalities with income classification of 5<sup>th</sup> and 6<sup>th</sup> classes is counted. The IRA allotted to the province is divided into two groups; classes 1<sup>st</sup> to 4<sup>th</sup> and 5<sup>th</sup> & 6<sup>th</sup> in proportion to the construction cost required. The provincial IRA for the eligible municipalities is considered for this project.
- c) For sanitation sub-sector, IRA to the eligible municipalities is regarded as available fund. The manner of allocation of provincial IRA to the eligible municipalities (3<sup>rd</sup> to 6<sup>th</sup>) is same as that in water supply sub-sector.

The total IRA of the province available for the eligible municipalities in the subject sector was estimated at ₱92,464,000 as a total of 5-year development program, consisting of water supply; ₱86,903,000 and sanitation, ₱39,285,000 (details are included in Table 11.5.1, 11.5.2 and 11.5.3, Supporting Report). The estimated IRA available is shown below.

<u>Sub-sector</u>	<u>Provincial IRA</u>	<u>Municipal IRA</u>	<u>Total</u>
Rural Water Supply:	1,695,000	3,886,000	5,561,000
Rural Sanitation:	11,882,000	33,193,000	45,075,000
Urban Sanitation:	9,745,000	32,084,000	41,828,000
Total:	23,322,000	69,163,000	92,464,000

The cost comparison was made between the estimated project cost (1998 price level) to be shared by the LGUs and available IRA of LGUs. Table 11.5.3 shows the cost sharing for the project among the GOP, LGUs and beneficiaries (BWSAs).

The GOP shall shoulder 50% of the overall project cost, utilizing the foreign assisted loan of 48.5% or ₱66.9 million and 1.5% or ₱2.1 million of the government counterpart fund. The remaining 50% of the overall cost shall be shared between the LGUs by 47% or ₱64.9 million and BWSAs (beneficiaries) by 3% or ₱4.1 million.

**Table 11.5.3 Cost-Sharing for the Project (Case 1): 1998 price level**

Financial Source	x 1,000 Peso	Percentage		Remarks
GOP	2,115	1.5	50	GOP counterpart
	66,917	48.5		Foreign Loan
LGUs	64,891	47	50	IRA
	4,142	3		BWSA equity
Total	138,065	100		

The cost comparison was made between the estimated project cost to be shared by the LGUs and available IRA of LGUs in the implementation period. Considering contingencies and VAT, the IRA to be used by LGUs will increase to ₱83.2 million from ₱64.9 million (1998 price level). The required cost is covered by 90% of available IRA (₱92.5 million).

#### Case 2 Utilization of IRA and MDF

The utilization of the MDF is considered in case that the LGUs will fail to furnish IRA for the cost to be shared (even if estimated IRA available meets the required cost to be shared by the LGUs). The foreign loan may be availed of at the maximum financing limit of 75% of the overall project cost.

Thus, the GOP shall possibly support the LGUs through the MDF in case that manageable IRA will not be able to fill up the cost requirement of the project. Table 11.5.4 shows cost sharing scheme for the project between the GOP and the LGUs.

GOP is possibly to finance up to ₱103.5 million or 75% of the total project cost in the portion of loan. Out of GOP finance through the loan, ₱66.9 million or 48.5% of the total project cost shall be granted to the LGUs, aside from 1.5% GOP counterpart fund.

The remaining ₱36.6 million or 26.5% of the total project cost shall be utilized for financing the LGUs to secure their budgetary capacity through MDF.

Table 11.5.4 Cost Sharing for the Project (Case 2): 1998 price level

Financial Source	x 1,000 Peso	Percentage			Remarks
GOP	2,115	1.5	1.5	50	GOP counterpart
	66,917	48.5	75		Foreign Loan
	(36,632)	(26.5)			Foreign Loan for MDF
LGUs	28,259	20.5	47	50	IRA
	36,632	26.5 ←			MDF through Foreign Loan
	4,142	3			BWSA Equity
<b>Total</b>	<b>138,065</b>	<b>100</b>			

Under this case, the IRA to be used by the LGU will increase to ₱33.8 million from ₱28.3 million (1998 price level), considering price contingency and VAT, which is 37% of available IRA estimated in the previous study (₱92.5 million).

#### 4) Project Implementation Schedule

The proposed implementation of the project is scheduled for five years after hiring the consultants. Figure 11.5.1 presents the proposed schedule.

Figure 11.5.1 Proposed Project Implementation Schedule

Activities	2001				2002				2003				2004				2005			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Project Implementation																				
1. Detailed Design																				
2. Community Development/ BWSA Formation																				
3. PQ, Bidding and Contractor Selection																				
4. Procurement and Delivery of Materials and Equipment																				
5. Construction of Water Supply and Sanitation Facilities (Construction supervisory services)																				
Project Monitoring																				



## 11.6 Cost Recovery

Cost recovery and cost sharing are essential to attain the planned targets. The PW4SP advocates the imposition of tariffs for the recovery of capital and operating cost based on the principle that adequate water, sewerage and sanitation facilities should be paid for.

### (1) Level I water supply systems

For Level I systems, cost sharing between the LGUs and beneficiaries is required for the capital costs, even the portion of the beneficiaries is limited according to the current national policy. Currently, the percentage shared by the beneficiaries seems to be 3 to 5% of total requirements based on the experience.

Beneficiaries are also responsible for all recurrent costs. Monthly recurrent cost is estimated at about 8 Pesos per household in the base year price level (refer to recurrent cost in Chapter 10). The figure will be increased up to about 12.90 Pesos per household in the year 2005, assuming an annual inflation rate of 7%. This monthly fee seems to be affordable to the users considering the current income level (refer to affordability in Chapter 6), but willingness to pay shall be promoted.

Depending on the users' income level, water charges shall be determined and agreed upon among the water users. The estimated water charge for O&M cost is ₱8 per household per month, which is less than 1% of the median monthly household income of ₱4,802 in 1998. However, the users will have to pay water charge of up to 2% of their monthly income or ₱96/household/month to manage not only for repair of hand-pump, but also rehabilitation and reconstruction of deep well, assuming that well life is 20 years.

### (2) Level II water supply systems

Full cost recovery is required for all capital costs for Level II systems. The number of households to be covered is 1,596 to meet the target (refer to Table 8.5.1: population to be served of 8,379 people and household size of 5.25 persons). The average capital cost to be paid is estimated at ₱11,500 per household (refer to Chapter 10 Main Report and Supporting Report). Applying the capital recovery factor to the capital costs with conditions of 7% interest rate and 20 years repayment period, monthly payment amounts to ₱90 per household.

The annual recurrent cost per household is estimated to be ₱180 (₱15/household/month) in the base year (refer to Chapter 10). It will reach to ₱24.10 in the year 2005 at an

annual inflation rate of 7%. Thus, the total amount of repayment and recurrent cost in the year 2005 is ₱114, which is 1.5% of the family income as shown below.

(a) Estimated water rate (flat rate; Pesos)	:	114
(b) Percentage of (a) to monthly median household income in 2005 <sup>1)</sup>	:	1.5%

Notes:

- 1) Provincial average monthly median income in 2005 (₱7,710 per household) is derived from 1994 Family Income and Expenditure Survey considering annual inflation rate of 7%. The monthly median income in 1998 is ₱4,802.

### (3) Level III water supply systems

A full recovery of capital and operation & maintenance cost is required for Level III systems. To test the affordability, a comparative study was made between estimated water rate (based on standard monthly consumption; 15m<sup>3</sup> per household) and projected income in year 2005. Total capital cost of Level III water supply system is ₱411.3 million for 18,959 households to be served. Assuming an annual inflation rate of 7% and 20 years repayment period, the annual capital cost to be paid is ₱2,048 per household. The monthly capital cost to be paid by each household is ₱171.

The monthly recurrent cost per household is estimated to be ₱61.0 (₱732.5/ year; refer to recurrent cost in Chapter 10 where operating cost is ₱35 million in base year for 47,538 households). Using an annual inflation rate of 7%, this recurrent cost is projected to be ₱97.9 per household in the year 2005.

The combined amount of capital repayment and recurrent cost in the year 2005 is ₱268.9/ household/month. The cost shall be recovered as a monthly water charge to be paid by users. The percentage of the water rate against income with more or less 5% is commonly affordable. In this regard, monthly water rate (3.5% of the household income) seems to be affordable.

(a) Estimated water rate for 15 m <sup>3</sup> (Pesos)	:	268.9
(b) Percentage of (a) to monthly median household income in 2005	:	3.5%

Notes:

- 1) Monthly median household income is ₱7,710 in the year of 2005.

#### (4) Sanitation

The provision of sanitary toilet facilities for public markets and schools is under LGUs in coordination with parent-teacher association. However, recurrent cost for the public markets shall be collected from the users including stakeholders of the market.

Household toilet shall be managed by individual households. However, the facility is costly with reference to the current income level, especially in the rural area (flush-type toilet; ₱23,000 and pour-flush toilet; ₱14,100). Governmental support is also limited to the provision of toilet bowl for pour-flush toilets as an incentive to increase the distribution of water-sealed toilets. Thus, cost recovery in application of loan shall be considered.

Applying the capital recovery factor to the construction cost with assumptions of 7% interest rate and 5 years repayment period, monthly repayment amounts to ₱468 for a flush type and ₱287 for a pour-flush type, respectively (details of unit cost are referred to in Chapter 10, Supporting Report). The percentages of repayment to household income in the year 2005 are calculated in the same manner as the study for Level III water systems and are shown below.

(a) Repayment for Flush Type (Pesos)	:	468
(b) Repayment for Pour Flush Type (Pesos)	:	287
(c) Percentage of (a) to monthly median household income in 2005 <sup>1)</sup>	:	6.07%

Note:

1) Monthly median household income is ₱7,710 in the year 2005

To expedite the sanitation sector improvement, introduction of specific loans that are revolving in character with low interest rates and longer repayment period may be an effective solution. For urban sanitation, the linkage with existing housing loan shall be established to cover construction of sanitary toilets.